

Zanzibar Protectorate.

Annual Report

ON THE

Medical and Sanitary Divisions

FOR THE YEAR

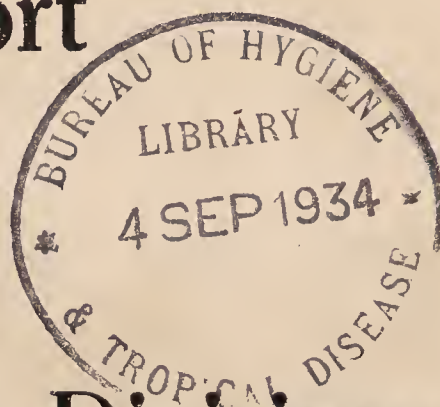
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OFFICE OF THE DIRECTOR OF
MEDICAL AND SANITARY SERVICES,

Zanzibar, 12th April, 1934.

Sir,

I have the honour to submit for the information of His Excellency the British Resident and for transmission to the Right Honourable the Secretary of State, the Medical Report on the Health and Sanitary conditions of the Zanzibar Protectorate for the year 1933, together with the Returns, etc., appended thereto.

I have also the honour to submit the Annual Report of the Veterinary Division.

I have the honour to be,

Sir,

Your obedient Servant,

B. SPEARMAN,
*Acting Director of Medical and
Sanitary Services,*
Zanzibar Protectorate.

THE HONOURABLE,

THE CHIEF SECRETARY

TO THE GOVERNMENT,

ZANZIBAR PROTECTORATE.

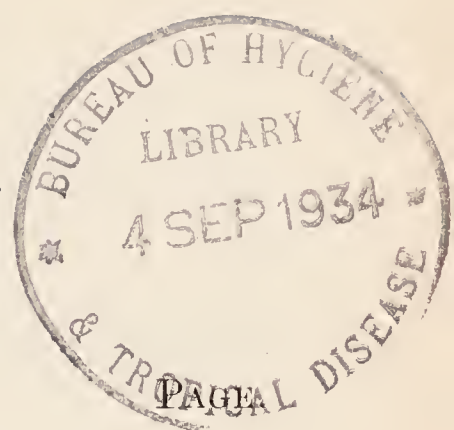


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A MAP OF ZANZIBAR ISLAND

SCALE

1 INCH TO 6 ENGLISH MILES

0 1 2 3 4 5 6 MILES

Hospital 
Dispensary 
Proposed } 
Dispensary



SKETCH MAP OF PEMBA ISLAND



Zanzibar Protectorate.

REPORT ON THE MEDICAL AND SANITARY DIVISIONS

FOR THE YEAR 1933

I. ADMINISTRATION

(A) STAFF.

The establishment for 1933 as sanctioned in the estimates was as follows:—

EUROPEANS.

One Director of Medical and Sanitary Services.
One Deputy Director of Sanitary Services.
One Resident Surgical Officer.
One Pathologist.
Eight Medical Officers.
One Sanitary Superintendent.
One Sanitary Inspector.
One Matron.
Eight Nurses.
Two Missionary Nursing Sisters, Leper Settlement.

ASIATICS.

One Assistant Surgeon.
Seven Sub-Assistant Surgeons.
Five Dispensers.
One Dispenser, Probationer.
Thirteen Sanitary Inspectors.
One Chief Clerk.
Eleven Clerks.
One Senior Laboratory Assistant.
One Junior Laboratory Assistant.
One Engineer Foreman.

NATIVES.

One Instructor, Native Dispensers.
Two Dispensers, Probationers.
One Laboratory Assistant.
Thirty-seven Junior Dispensers.
Hospital, Dispensary, Laboratory and Store Attendants.
Infectious Diseases Hospital Attendants.
Quarantine Station Attendants.
Vaccinators.
Menial Staff.

APPOINTMENT.

Dr. W. L. Webb, Director of Medical and Sanitary Services.

INVALIDING.

Dr. J. A. Taylor, Director of Medical and Sanitary Services.

RETIREMENTS.

Mr. P. Cairns, Sanitary Superintendent.

Mr. I. B. Martin, Chief Clerk.

TRANSFER.

Dr. D. P. Turner, Medical Officer.

The writer desires to place on record the loss sustained by the Department owing to the retirement on grounds of ill-health of Dr. J. A. Taylor, the Director of Medical and Sanitary Services, who had rendered devoted service to the cause of Public Health and the betterment of health of the native population during his tenure of office.

(B) LEGISLATION AFFECTING PUBLIC HEALTH ENACTED
DURING THE YEAR.

1. Decree No. 22 of 1933.—Amendment of the Druggists Decree, 1927, abolishing half yearly licences.
2. Decree No. 29 of 1933.—To amend for merging of the Local Sanitary Board with the Board to be appointed under the Zanzibar Town Board Decree.
3. Government Notice No. 8 of 1933.—The Public Health Decree, 1929, the Public Health (Houses Let in Lodgings) Rules, 1933.
4. Government Notice No. 22 of 1933.—The Diseases of Animals Decree, declaration of infected animals.
5. Government Notice No. 44 of 1933.—Leprosy Decree, 1926, the Leprosy (Amendment) Rules, 1933.
6. Government Notice No. 57 of 1933.—The Diseases of Animals Decree, 1923, importations of animals from Kenya and Tanganyika Territory.
7. Government Notice No. 62 of 1933.—The Public Health Decree, 1929, appointment of Central Board of Health.
8. Government Notice No. 81 of 1933.—The Public Health Decree, 1929, appointment of members of Local Sanitary Board.
9. Government Notice No. 82 of 1933.—The Public Health Decree, 1929, application of Part VI of the Decree.
10. Government Notice No. 83 of 1933.—The Public Health Decree, 1929 (Houses Let in Lodgings) Amendment Rules, 1933.
11. Government Notice No. 89 of 1933.—The Public Health Decree, 1929 (the Public Health (Slaughter House) Amendment Rules, 1933).

12. Government Notice No. 90 of 1933.—The Public Health Decree, 1929 (the Public Health (Laundries) Rules, 1933).
13. Government Notice No. 91 of 1933.—The Public Health Decree, 1929 (the Public Health (Milk and Dairies) Rules, 1933).
14. Government Notice No. 92 of 1933.—The Public Health Decree, 1929 (the Public Health (Aerated Waters and Ice Factories) Rules 1933).
15. Government Notice No. 93 of 1933.—The Public Health Decree, 1929 (the Public Health (Hawkers of Food) Rules, 1933).
16. Government Notice No. 94 of 1933.—The Public Health Decree, 1929 (the Public Health (Bakehouses) Rules, 1933).
17. Government Notice No. 95 of 1933.—The Public Health Decree, 1929 (the Public Health (Establishment of Government Dairy) Rules, 1933).
18. Government Notice No. 96 of 1933.—The Public Health Decree, 1929 (the Public Health (Eating Houses) Rules, 1933).

(C) FINANCIAL.

(Vide Table II for further details.)

REVENUE.		£
Hospital fees, sale of drugs, etc.	...	890
Contribution from other dependencies towards Quarantine Services	...	2,637
Total Revenue		3,527

EXPENDITURE.		£
Personal Emoluments	...	32,028
Other Charges	...	16,288
Special Expenditure	...	978
Total Expenditure		49,294

II. PUBLIC HEALTH.

(A) GENERAL REMARKS.

It is satisfactory to be able to record that the Protectorate again remained free from any major epidemic including Small-pox. Continued freedom from the latter disease is probably due to the greatly diminished incidence of this disease in India.

The rainfall (47.54 inches) during the year was considerably less than in previous years with a consequent diminution in the incidence of malarial infections.

In general then it may be said that Public Health as a whole was satisfactory during the year under review as far as epidemic disease was concerned. It cannot however be said that the physical fitness of the native population is of such a standard as to be a cause for satisfaction. To effect an improvement in the general health of the population many undesirable factors in the environment of the individual must be eliminated, such as ankylostomiasis, chronic malarial infection, poor housing, deficient diet and bad habits to mention only a few. Improvements can only gradually be brought about by education and propaganda through the efforts of the Medical Officers, District Dispensaries and District Dispensers with the assistance of the Administrative and Educational Officers. In this connexion it is interesting to note the observations of the Medical Officer-in-charge District Dispensaries during a brief visit to certain isolated fishing villages on the East Coast of Zanzibar Island. These villages are cut off by a wide coral belt from the more fertile interior and their diet consists almost entirely of milled rice and fish. The Medical Officer, writes: "on investigation I found that the inhabitants were suffering from a chronic peripheral neuritis with varying degrees of numbness, paresthesiæ, shooting pains, and weakness. These symptoms were chiefly confined to the legs and feet though some complained of their hands also. No knee jerks were obtained in any of the cases I examined. Tenderness of the muscles of the calves on deep pressure was easily elicited. The Sheha at one place stated that two people had died from this disease quite recently. I saw no case which was unable to get about, but some were obviously walking with difficulty. A concomitant symptom which was complained of in most cases poorness of vision. On superficial examination there were no signs in the eyes to account for diminished visual acuity.

The question of the alleged infertility of the inhabitants was not gone into very fully, because I felt that in all probability it has a common origin with the neuritis and defective vision, and that it would respond to the same treatment.

Enquiry into the normal diet of the people disclosed the fact that it consists almost entirely of rice and a little fish. Leopards and laziness mitigate against keeping chickens, goats or cattle. No fruit or vegetables seem to be grown locally as the ground is rocky.

The number of patients treated in Government hospitals during the year was 4,493 as compared with 4,534 in 1932 and 4,266 in 1931.

The following table shows the total number of cases in each group of diseases treated during the year, and the percentage of the number of each in each group to the total number of cases treated:—

Group.		Cases.	Percentage of total number of cases.
I	Epidemic, Endemic and Infectious Diseases	... 17,900	11.39
II	General Diseases not included above	... 2,715	1.73
III	Affections of the Nervous System and Organs of Senses	... 9,686	6.16
IV	Affections of the Circulatory System	... 978	0.62
V	Affections of the Respiratory System	... 11,574	7.36
VI	Diseases of the Digestive System	... 41,321	26.29
VII	Diseases of the Genito-Urinary System (non-venereal)	3,608	2.30
VIII	Puerperal State	... 93	0.06
IX	Affections of the Skin and Cellular Tissue	... 50,564	32.17
X	Diseases of the Bones and Organs of Locomotion (other than Tuberculosis)	... 3,663	2.33
XI	Malformations	... 6	0.00
XII	Diseases of Infancy	... 13	0.01
XIII	Affections of Old Age	... 260	0.17
XIV	Affections caused by External Causes	... 10,911	6.94
XV	Ill-defined Diseases	... 3,875	2.47
		157,167	100.00

The percentages for the different groups correspond very closely with those for previous years. As compared with 1932 the greatest variation is in Group IX which shows an increase from 23.47 to 32.17.

1. GENERAL DISEASES.

The cases of cancer numbered 11 as compared with 26 in 1932 and 26 in 1931. Of the 11 patients this year, 6 were males and 5 females; 2 Asiatics (1 Arab) and 9 Africans. Non-malignant tumours numbered 61 as compared with 115 and 117 in the two previous years.

Affections of the Nervous System and Organs of the Senses.—Most of the cases in this Group consist of headache and minor ear and eye affections. As compared with the two preceding years, serious conditions were returned as follows:—

	1931.	1932.	1933.
Meningitis	... 3	3	3
Locomotor Ataxia	... 20	19	13
Myelitis	... 12	5	—
Spastic Paraplegia	... 32	4	15
Apoplexy and Paralysis	... 115	90	83
Epilepsy	... 13	19	11
Cataract	... 155	82	58

Affections of the Circulatory System.—As in previous years lymphangitis, and lymphadenitis, chiefly of filarial origin, and hæmorrhoids account for most of the cases. The cases of cardiac disease numbered 80 as against 96 in 1932 and 102 in 1931.

Affections of the Respiratory System.—These numbered 11,574 as compared with 10,686 and 13,087 in the two preceding years. The more important conditions were as follows:—

	1931.	1932.	1933.
Bronchitis	... 9,938	8,446	8,427
Broncho-Pneumonia	... 70	36	31
Pneumonia	... 225	150	95
Pleurisy	... 77	72	92
Asthma	... 593	471	435

The cases of pneumonia admitted to hospital numbered 71, and 21 ended fatally as against 86 admissions with 12 deaths in 1932 and 119 admissions with 27 deaths in 1931. The Zanzibar Town death returns show 13 deaths from pneumonia and Broncho-pneumonia as compared with 52 and 100 in the two previous years.

Diseases of the Digestive System.—The cases in this Group numbered 41,321 or 26.29 per cent. of all cases treated during the year. Ankylostomiasis (see page 13) with 12,481 cases and minor ailments such as constipation, diarrhoea, dyspepsia and dental caries constitute most of the cases. Diseases of the teeth and gums numbered 6,619 as compared with 6,248 in 1932 and 5,712 in 1931. As has been stressed in previous reports the facilities for continuous and regular dental treatment are sadly lacking and the appointment of a private dental practitioner under contract for Government work is under consideration.

Of the more serious diseases in the Group, hernia accounted for 376 cases as against 384 in 1932 and 452 in 1931 and appendicitis for 30 as against 20 and 37. Two of the hernia cases were returned as femoral, 316 with 4 deaths as inguinal, 15 as umbilical and 42 with three deaths as strangulated.

In all 657 cases of the Group were admitted to hospital and 44 deaths occurred as compared with 699 admissions and 47 deaths in the preceding year. Of the deaths this year, 16 were due to ankylostomiasis, 7 to hernia, 1 to enteritis, 1 to cirrhosis of the liver and three to appendicitis.

Diseases of the Genito-Urinary System (non-venereal).—Schistosomiasis, (see page 13) as for some years past, is the most common disease in this Group. Orchitis cases numbered 408 as against 502 and 488 in the two preceding years, hydrocele 406 as against 443 and 403 and nephritis 104 as against 104 and 156. Hydrocele is thought to be for the most part of filarial origin.

Puerperal State.—The total number of cases treated at the hospital was 93 with three deaths. In Zanzibar Town 6 deaths are recorded from puerperal disease.

Affections of the Skin and Cellular Tissue.—As usual, this Group, after diseases of the Digestive System contains the largest number of cases. Of the 50,564 cases, 31,037 or more than half, were ulcers. Elephantiasis cases numbered 158 as compared with 233 in 1932 and 190 in 1931; 32 patients suffering from this condition were admitted

to hospital and 19 of these were operated upon. The cases of gangrene numbered 44 and of carbuncle 105 as compared with 25 and 26 respectively in the previous year.

Diseases of Bones and Organs of Locomotion (other than tuberculosis).—The number of cases returned under this heading was 3,663 as compared with 3,775 last year; the majority is due to rheumatic affections usually arising in the first place as complications of filariasis and gonorrhœa.

Affections Produced by External Causes.—Of the 10,911 cases in this Group, 326 necessitated admission to hospital and 11 deaths resulted as against 363 admissions with 22 deaths in 1932, and 335 admissions with 26 deaths in 1931. Of the 11 deaths during the year, 3 were due to fractures, 5 to burns and 3 to other injuries.

2. COMMUNICABLE DISEASES.

(a) Mosquito or Insect-Borne.

Malaria.—The cases of malaria treated this year numbered 7,536 with nine deaths as against 8,369 with nine deaths in 1932, and 10,146 cases with 6 deaths in 1931. Of this year's cases, 5,771 occurred in Zanzibar Island and 1,765 in Pemba; in the previous year, 6,053 in Zanzibar Island and 2,316 in Pemba; and in 1931, 7,736 in Zanzibar and 2,410 in Pemba. Three of the deaths this year were due to blackwater as compared with one in 1932 and three in 1931.

The following table shows the number of cases of malaria treated at each station or district dispensary during the past three years:—

Stations.	Cases treated.		
<i>Zanzibar Island.</i>	1931.	1932.	1933.
Zanzibar	4,679	3,375	3,493
Selem	384	360	147
Mkokotoni	42	36	72
Mwera	181	235	320
Chwaka	44	35	38
Mbiji	129	112	50
Kizimbani	275	299	316
Mahonda	6	24	21
Mangapwani	172	63	36
Kizimkazi	112	47	30
Bweleo	117	56	23
Tunguu	102	37	7
Walezo	229	302	389
Bububu	270	155	115
Uzini	116	140	98
Chaani	40	52	33
Makunduchi	486	258	28
Mkwajuni	24	21	24
Ndijani	—	—	9
Temporary Treatment Centres	328	—	—
Travelling	—	328	435
Home Treatment Service	—	118	87
Total Zanzibar Island	7,736	6,053	5,771

Pemba Island.

Wete	741	647	525
Chake Chake	629	781	338
Mkoani	289	302	400
Kengeja	82	149	111
Matangatwani	63	100	181
Jambangome	253	55	53
Stambuli	120	28	49
Mzambaraoni	55	46	44
Ole	78	26	12
Kangani	84	24	33
Kinazini	—	90	19
Ziwani	—	40	—
Banani	16	25	—
Total Pemba Island	2,410	2,316	1,765
Total whole Protectorate	10,146	8,369	7,536

The number of cases of malaria treated represents 3.67 per cent of all cases treated during the year. This compares with the five preceding years as follows:—

1929.	1930.	1931.	1932.	1933.
6.16	6.53	7.21	5.97	3.67

The incidence of malaria was less than the previous year and the percentage of cases to all cases treated was the lowest since 1929.

Of the cases returned with the type of malaria defined, 1,298 were tertian, 182 sub-tertian and 67 quartan as compared with 1,174 tertian, 261 sub-tertian and 21 quartan in the previous year.

Blackwater Fever.—Six cases of blackwater fever, three ending fatally, were treated by Government Medical Officers. The number of cases with deaths treated by Government Medical Officers during each of the past ten years, was as follows:—

	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Cases	4	3	9	3	15	13	8	9	6	6
Deaths	2	1	2	—	3	4	3	3	1	3

The following is a summary of the information obtained from the reports on the six cases treated by Government Medical Officers.

Sex.—Six Males.

Age.—18, 20, 26, 26, 31, 34.

Race.—Three British Indians, one Singalese, two Chinese.

Occupation.—Three merchants, two carpenters, one fisherman.

Locality.—One in Zanzibar and five in Pemba. Of the five Pemba patients, two resided in Chake Chake, one in Mkoani and two in Wete.

Period of Residence.—All six had resided on the East Coast, one for eighteen months, two for six months, one for twelve years, one for twenty months and one for fifteen years.

Previous attacks of Malaria.—Numerous in all cases.

Previous attacks of Blackwater Fever.—One had blackwater fever in 1920, 1925, 1927, 1928, 1930.

Seasonal Incidence.—The cases occurred in February (1), March (1), July (1), August (2), September (1).

Causes of Attack.—In all cases, where any definite information could be obtained, there had been numerous attacks of malaria inadequately treated.

Dengue.—Two cases occurred during the year as compared to three last year.

Filariasis.—The returns show 473 cases as compared with 421 in 1932 and 218 in 1931. These figures however do not include many conditions shown under other heads thought to be for the most part of filarial origin. Of these the following were recorded this year:—lymphangitis 192, lymphadenitis 446, hydrocele 406, varicocele 19, elephantiasis 158.

(b) *Infectious Diseases.*

The following table shows the number of cases, with deaths, of the more important infectious diseases treated during this and two preceding years:—

	Cases. Deaths.		Cases. Deaths.		Cases. Deaths.	
	1931.		1932.		1933.	
Enteric Group	7	2	4	—	6	—
Small-pox	13	1	—	—	3	1
Whooping Cough	98	—	125	—	201	—
Influenza	2,188	2	559	2	984	—
Mumps	649	—	382	—	75	—
Dysentery	151	6	130	9	73	5
Leprosy	44	2	86	1	47	2
Chicken-pox	12	—	46	—	25	—
Yaws	4,659	—	4,432	—	5,935	—
Tetanus	7	3	2	1	3	1
Tuberculosis	538	45	238	41	244	52
Syphilis	428	3	446	3	446	2
Soft Chancre	58	—	46	—	67	—
Gonorrhœa	1,734	2	1,775	1	1,662	2

Enteric Group.—Of the six cases treated by Medical Officers this year, five were returned as typhoid, and one as Paratyphoid A. The cases and deaths during this and three preceding years were as follows:—

	Cases. Deaths.		Cases. Deaths.		Cases. Deaths.		Cases. Deaths.	
	1930.		1931.		1932.		1933.	
Typhoid Fever	10	—	4	—	4	—	5	—
Paratyphoid A	—	—	1	—	—	—	1	—
Paratyphoid B	6	—	1	1	—	—	—	—
Type undefined	—	—	1	1	—	—	—	—

Of this year's cases, all occurred in Zanzibar Town.

In addition to the above, ten cases of Typhoid Fever and two cases Paratyphoid Fever were notified by Private Medical Practitioners in Zanzibar Town.

Small-pox.—Three cases, all imported, with one death.

Whooping Cough.—As compared with last year this disease shows some increase, 191 cases occurring in Zanzibar Island and ten in Pemba.

Influenza.—The incidence of this disease shows some increase. 984 cases occurring during the year as compared to 559 in the previous year.

Dysentery.—Consequent on the installation of a water carriage system the disease diminished considerably in the jail and asylum.

Fifteen of the cases returned this year occurred in Pemba and 58 in Zanzibar Island. Of the Zanzibar cases 48 occurred in the Town and 10 in districts. Nineteen of the town cases occurred in Central Prison, Lunatic Asylum and Police Lines, as compared with 40 in the previous year.

Three of the cases recorded this year were returned as amœbic, 30 as bacillary and 40 with type undefined.

Five deaths from dysentery were notified in Zanzibar Town as against ten in the previous year, these figures include respectively one and two deaths occurring in the Central Prison.

Leprosy.—See D.D.S.S.'s report page 37 and report on the Leper Settlement (page 76).

Yaws.—The incidence of this disease shows a slight increase this year, due chiefly to a larger number of cases being reported from Pemba.

Tetanus.—Three cases occurred this year, one contracted in Zanzibar Island, and two in Pemba.

Tuberculosis.—Of the 244 cases this year, 224 were tuberculosis of the lungs and 20 of other organs.

As compared with the two preceding years the cases were returned from the following localities:—

<i>Zanzibar Island.</i>	1931.	1932.	1933.
Town	383	92	82
Districts	94	116	123
<i>Pemba Island.</i>			
Wete	33	10	10
Chake Chake	18	17	19
Mkoani	6	2	9
Districts	4	2	1
	538	238	244

The deaths notified from all sources in Zanzibar Town as due to tuberculosis during each of the past ten years were as follows:—

1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
185	167	132	145	138	190	125	91	57	51	52

A short report on the work performed at the T.B. Clinic is contained in Section VI page 49.

Venereal Disease.—The total number of cases of venereal diseases of all forms treated this year numbered 2,175 as compared with 2,267 in 1932, and 2,220 in 1931. Gonorrhœa is common but not of a virulent type.

(c) *Helminthic Diseases.*

The following table shows the number of cases of the more important helminthic diseases treated during this year as compared with the two preceding years:—

	1931.	1932.	1933.
Ankylostomiasis	13,459	13,941	12,481
Schistosomiasis	669	817	736
Ascariasis	604	447	329
Filariasis	218	421	473

Ankylostomiasis.—There is a slight reduction of cases as compared with the previous year. Lack of funds and necessary staff prevented any specific campaign being undertaken.

Schistosomiasis.—During the year under review and two preceding years, cases have been returned from Zanzibar and Pemba as follows:—

	1931.	1932.	1933.
Zanzibar Island	406	390	383
Pemba	263	427	353
	669	817	736

A slight reduction in the incidence of this disease is also apparent. As mentioned in last year's report further investigation into the geography of the disease and the identification of the vector is necessary.

Ascariasis.—Of the 329 cases treated this year, 312 were returned from Zanzibar Island, 17 from Pemba as compared with 447 and 33 respectively in 1932. The largest number of cases are again reported from the Southern District.

(B) VITAL STATISTICS.

1. GENERAL POPULATION.

The estimated population for the year 1933 was 237,374, this estimate being based on the 1931 census, and the births and deaths recorded during the years 1932 and 1933. The number of births exceed the number of deaths by 901. The crude birth and death rates for the year are 19.28 and 15.48 respectively. The table below shows vital statistics figures for the last five years:—

	1928.	1929.	1930.	1931.	1932.	1933.
Births	4,236	4,204	3,641	4,665	4,505	4,576
Deaths	4,302	3,893	4,151	4,624	4,630	3,675
Birth Rate	19.34	19.31	16.79	19.81	19.17	19.28
Death Rate	19.64	17.88	19.14	19.64	19.68	15.48

With regard to the different races the births registered among Arabs and Africans numbered 4,000, and the deaths 3,425, or an excess of 575 births over deaths. Based on the total population, estimated 220,103 for these two races, the crude birth rate was 18.17 and death rate 15.56 per 1,000. Among Indians and other races, the births and deaths numbered 573 and 248 respectively, or an excess of births of 325.

The registration of births and deaths is compulsory and the death returns may be taken as approximately correct.

Zanzibar Township.—A summary of the Vital Statistics relating to Zanzibar Township are contained in Table III (page 63). During the year 652 births and 966 deaths were returned, as compared with 632 births and 1,107 deaths in 1932. Of the births and deaths this year, 212 and 744 respectively occurred among Arabs and Africans. The Arab and African population is estimated at 32,032 and based upon this figure the birth rate for these races was 6.62, and death rate 23.23. As noted in previous year the death rate greatly exceeds the birth rate among these races, and unless this state of affairs is altered and the rates reversed, before no long time these people will be replaced by other more vigorous races.

The chief causes of death in the township this year are as follows, the corresponding number for the previous year being shown in brackets; malaria 104 (77), tuberculosis 49 (54), bronchitis 25 (39), broncho-pneumonia 25 (21), pneumonia 28 (47), ankylostomiasis 159 (141), senility 212 (216). Reference to these has already been made.

2. GENERAL EUROPEAN POPULATION.

Two deaths of Europeans occurred in the Protectorate during the year, the causes being, Cerebral Abscess and Chronic Appendicitis. In all, 568 cases of illness were treated by Government Medical Officers, 298 of the patients being officials and 270 non-officials. Thirty-five Officials and 31 non-officials were admitted to hospital, 2 deaths occurring among these. In 1932 the cases treated numbered 601 (271 officials, 330 non-officials) and there were 59 admissions to hospital with one death. The more common or important conditions treated were as follows, the corresponding figures for the previous year being shown in brackets:—malaria 24 (61), influenza 11 (28), neuritis 1 (3), neurasthenia 1 (2), lymphangitis 1 (3), bronchitis 12 (13), tonsillitis 9 (26), pharyngitis 3 (2), gastritis 2 (2), dyspepsia 6 (22), appendicitis 3 (2), boils 5 (16), abscess 3 (7), arthritis 1 (4), myalgia 1 (14), injuries 9 (45), debility 3 (24).

Three births occurred during the year.

3. EUROPEAN OFFICIALS.

One death occurred among European Officials during the year. The cases of illness treated number 313, and 105 of these necessitated officials being placed off duty, the total number of days off duty amounting to 590. There were 35 admissions to hospital. The more common or important conditions treated were as follows, the corresponding figures for the previous year being shown in brackets:—malaria 26 (39), influenza 18 (11), dysentery 1 (2), bronchitis 3 (2), tonsillitis 6 (6), appendicitis 5 (1), injuries 14 (20), undefined fever 7 (0). Of the 26 cases of malaria this year, 22 were returned from Zanzibar Island and 4 from Pemba. In the previous year the corresponding figures were 26 from Zanzibar and 13 from Pemba.

The following table shows the Sick, Invaliding, and Death Rates for the whole Protectorate as compared with those for the previous years:—

	1931.	1932.	1933.
Total number of officials resident	117	111	106
Average number resident	87.44	83.87	77.63
Total number on sick list	127	114	298
Total number of days on sick list	601	687	546
Average daily number on sick list	1.65	1.88	1.22
Percentage of sick to average number resident	1.89	2.24	1.93
Average number of days on sick list for each patient	4.73	6.02	1.83
Average sick time to each resident	6.87	8.19	7.03
Total number invalided	1	2	2
Percentage of invaliding to total residents	.85	1.81	1.48
Total deaths	—	—	1
Percentage of deaths to total residents	—	—	.94
Percentage of deaths to average number resident	—	—	1.29

4. NON-EUROPEAN OFFICIALS.

All non-European officials of the 4th and higher grades are included under this head. One death occurred during the year, the cause of death being Toxæmia. In all, 947 cases of illness were treated and necessitated officials being placed off duty on 387 occasions, the total number of days off duty amounting to 2,884. The admissions to hospital number 62.

The more common or important conditions treated were as follows, the corresponding figures for the previous year being shown in brackets:—malaria 176 (158), blackwater 0 (1), influenza 106 (128), tuberculosis 0 (2), diabetes 1 (3), neurasthenia 2 (1), pneumonia 3 (2), bronchitis 35 (40), asthma 11 (13), tonsillitis 18 (17), pharyngitis 15 (6), myalgia 17 (22), injuries 16 (38), undefined fever 16 (12), debility 10 (5). Of the 176 cases of malaria this year 112 were returned from Zanzibar Island and 64 from Pemba.

Medical Boards were held on four non-European Officials, all were permanently invalided for the following causes:—Hysterical amblyopia 1, General Debility 1, Neurasthenia 1, Pulmonary Tuberculosis 1.

The following table shows the Sick, Invaliding and Death Rates for this and two previous years:—

	1931.	1932.	1933.
Total number of officials resident	555	561	535
Average number resident	508.15	508.69	483.91
Total number on sick list	688	625	387
Total number of days on sick list	3,316	3,084	2,489
Average daily number on sick list	9.08	8.45	6.81
Percentage of sick to average number resident	1.79	1.66	1.41
Average number of days on sick list for each patient	4.82	4.94	6.43
Average sick time to each resident	6.53	6.07	5.14
Total number invalided	7	4	4
Percentage of invaliding to total resident	1.26	0.36	.75
Total deaths	6	4	1
Percentage of deaths to total residents	1.08	0.72	.19
Percentage of deaths to average number resident	1.18	0.79	.21

5. POLICE FORCE AND PRISON STAFF.

The total strength of non-commissioned officers and men of the Police Force and Prison Staff for the year was 624, and the average strength 576. The following is a summary of the more important returns from the different towns and districts.—

	Zanzibar Town	Zanzibar District	Chake Chake Town and District	Wete Town and District	Mkoani Town and District	Total
Average strength ...	419	56	37	36	28	576
Number treated ...	1,907	395	276	154	144	2,876
Number placed off duty ...	197	92	98	46	64	497
Number of days off duty ...	789	243	327	122	195	1,681
Average number off duty ...	2.16	2.76	0.89	0.33	0.53	6.67
Number admitted to hospital ...	67	63	11	18	10	169
Number of days in hospital ...	1,102	163	96	122	33	1,516
Average number in hospital ...	3.01	0.17	0.26	0.33	0.09	3.86
Invalided ..	10	...	...	...	...	10
Deaths ...	2	...	...	...	...	2

The Zanzibar returns are adversely affected by the transfer when practicable of serious cases to headquarters.

The causes of death and invaliding were as follows:—

Death:—Pulmonary tuberculosis 1, septicæmia 1.

Invaliding:—(a) Police—General debility 2, pulmonary tuberculosis 3, hepatomegaly and splenomegaly 1, chronic myelitis 1, chronic arthritis 1, asthma 1, filariasis 1.

(b) Warders—Nil.

The more common or important illnesses treated were:—

Malaria 161, dysentery 2, influenza 17, yaws 15, venereal disease 30, neuralgia 36, conjunctivitis 52, adenitis 35, bronchitis 223, dental caries 79, pharyngitis 48, dyspepsia 22, ankylostomiasis 73, constipation 284, boil 33, ulcer 63, arthritis 48, myalgia 100, injuries 177.

In 1932 there were three deaths and 14 invalidings, the number treated was 2,067, number placed off duty 172, the number of days off duty 713, and average number off duty 1.94.

III. HYGIENE AND SANITATION.

Report by the Deputy Director of Sanitary Services.

A. GENERAL REVIEW OF WORK DONE AND PROGRESS MADE.

The Deputy Director of Sanitary Services acted as Director of Medical and Sanitary Services from January to the end of the year, and from January to October the Health Officer acted as Deputy Director of Sanitary Services, while from October to the end of the year Dr. J. M. Semple acted as Deputy Director of Sanitary Services.

The work of the Central and District Boards of Health has proved most valuable, and the following matters have been dealt with:—

Refuse carts; sites for latrines; sanitary services for native areas in Zanzibar town; emptying of private sullage pits by P.W.D.; water supply; anti-malarial drainage; fees for registration under Public Health Rules; Zanzibar Market latrine; destitute paupers and lunatics; meat and fish shops; cattle grazing in the town.

The reduction in the personnel of the Health Staff effected last year is reflected in Tables 1 and 2 which show fewer collections of mosquito larvæ and none of adult mosquitoes.

There are no features of outstanding importance to record of the activities of the Public Health Department during the year. Routine work was carried out as satisfactorily in the Townships as a reduced staff would permit and less intensively in the Districts. Details of work done are given below, under appropriate headings.

In spite of the installation of a water carriage system in the Central Jail, the incidence of bacillary dysentery, which was reduced almost to vanishing point last year showed a slight recrudescence in February, June and October.

There were no outbreaks of serious epidemic disease during the year.

1. PREVENTIVE MEASURES.

(a) MOSQUITO AND INSECT-BORNE DISEASES.

Zanzibar.—Anopheline control was less difficult during the year than usual, there having been only 12 inches of rain in April and May as compared with 25 and 33 inches in 1932 and 1931 respectively. In dry weather the township was practically free of anopheline breeding places except at its North-Eastern border where shallow wells and pot-holes retain water.

The incidence of malaria in the town as shown by returns from the various hospitals and dispensaries was much less than in previous years, the decrease corresponding with the decrease in rainfall. A peak in the malaria curve always occurs just two months after a peak in the rainfall curve, though rain in November and December is followed by proportionally less malaria than rain in April and May.

There are two factors which may account for this; namely, that the prevailing winds in the early part of the year tend to blow mosquitoes out of the town, and that the colder weather in June and July tends to cause relapses of latent malaria. It is also possible that other climatic factors operate to make the susceptibility of mosquitoes to malaria less in the early part of the year. There is no doubt, however, that the increased malaria incidence after heavy rain is mostly due to increased anopheline infestation and the anti-larval method is the one indicated for the reduction of malaria in Zanzibar.

As already indicated, anti-larval measures are effective during dry and moderately dry weather but the old swamps—particularly the Polo Ground and Ziwani, being flat and having only surface drainage, become water-logged after rain, and covered with small surface pools in which *A. costalis* readily breeds and which require careful and very extensive oiling if that breeding is to be prevented. The only permanent and satisfactory method of dealing with these places would be some form of sub-soil drainage. Owing to the fact that they are low-lying, this can only be done by extensive filling which would make sub-soil drainage to the present surface drains possible, or by putting in a sub-soil system below the level of the present drains, with subsequent pumping. Both these methods would be expensive and the second would entail permanent maintenance charges. In an area similar in essentials to those mentioned, namely, the Harbour Works excavation, shallow filling with refuse has been started, partly as an anti-malarial measure; and should this prove a satisfactory method of dealing with the problem it might be applied later at Ziwani and the Polo Ground.

The sub-soil drainage system in the Recreation Park was satisfactory this year but it requires extension, and it is yet to be seen whether it can ever deal with really extensive flooding such as occurred in 1931.

Just outside the township boundary the Migombani and Sebulene swamps form anopheline breeding places for the greater part of the year, while two stream beds at the North-Eastern border of the township contain "pot-holes" and small swamps during most periods. The latter have sufficient gradient to make it possible to deal with them by surface drains and the water from the Sebulene swamp might be taken into one of them; but in Migombani, extensive sub-soil drainage is required and until this is done the area round the Jail and Police Lines will remain one of the most anopheline infested parts of the town.

The position with regard to domestic mosquitoes was the same as in previous years, *Aedes* infestation being low and that of *Culex* high, while more larvæ of the former genus than of the latter were found. As has been noted before, the infestation of the town with *Culex fatigans* will continue until satisfactory domestic drainage is universally adopted. Progress towards this ideal is being steadily made (*vide infra*).

TABLE No. 1.

Collections of mosquito larvæ found in Zanzibar township.

	1931.	1932.	1933.
Anopheline	55	179	38
Culex	815	873	544
Stegomyia	3,327	3,298	2,388

TABLE No. 2.

Adult mosquitoes caught in Zanzibar township.

	1931.	1932.	1933.
Anopheline	206	37	—
Culex	5,676	2,626	Nil
Stegomyia	369	850	Staff retrenched.

TABLE No. 3.

Sullage and Cesspits oiled during 1933.

January	8,060	July	7,364
February	7,671	August	7,644
March	7,359	September	5,125
April	6,526	October	5,544
May	6,806	November	6,507
June	7,350	December	6,976
			Total oilings
			82,932

TABLE No. 4.

	1931.	1932.	1933.
Number of notices served	1,713	1,544	2,151
Number of prosecutions instituted	7	1	7
Number of convictions obtained	5	1	7

Wete.—The anti-malaria drains in the Market. Customs, Dak Bungalow and Slaughter-house Swamps continue to function satisfactorily. Sixty feet of Cement Channel drain were constructed by the P.W.D. near the bridge by the Customs swamp where anopheles larvæ were frequently found. Continual watch has been kept to prevent cattle from grazing on the low levels of the swamps, as hoof imprints are favourite anopheline breeding places.

All premises within the Township and adjoining areas have been visited weekly for the purpose of discovering and remedying mosquito breeding nuisances.

Shells, old tins, coconut husks, and other containers likely to hold stagnant water have been regularly collected from the swamps, cemeteries, etc., by the sweepers who remove the Cow droppings from the open lands.

TABLE No. 5.

Comparative table showing collections of mosquito larvæ found in the Township of Wete.

	1931.	1932.	1933.
Anopheline	7	11	13
Culex	6	17	67
Stegomyia	115	151	120

TABLE No. 6.

Sullage and cesspits oiled during 1933.

January	849	July	1,177
February	997	August	1,633
March	1,425	September	877
April	985	October	1,562
May	771	November	1,717
June	1,467	December	1,167
	6,494		8,133
		Total oilings	14,627

Crab-holes were oiled and filled in the Slaughter-house swamp, customs swamp, behind customs godowns, Dak Bunglow and Market swamps, during the year to a total of 28,054.

TABLE No. 7.

	1931.	1932.	1933.
Number of notices served	81	82	167
Prosecutions instituted	—	—	23
Convictions obtained	—	—	23

Chake Chake.—The work of bush clearing has been rigorously pursued in all swamp areas throughout the year, and the systematic collections of tins and shells from these areas has resulted in definite improvement.

Those of the Eucalyptus trees which have survived from last year's planting are well established, and should help materially in drying those parts of the swamp areas.

Anopheline infestation continues to be greatest about the Tibirizi, Wireless and Chachani areas, while the remainder of the town remains fairly free.

Careful control has been exercised over household species, by ceaseless searching and the collection of tins, empty nuts, etc.

TABLE No. 8.

Table showing collections of mosquito larvæ found in Chake Chake township:—

Anopheline	89
Culex	289
Stegomyia	142

TABLE No. 9.

The following adult mosquitoes were caught in the Township:—

Anopheline	156
Culex	1,210
Stegomyia	22

TABLE No. 10.

Number of notices served	136
Number of prosecutions instituted	4
Number of convictions obtained	4

Eighty thousand and thirty-nine sullage and cesspit oilings were carried out during the year.

Mkoani.—North Swamp—This swamp gave no trouble throughout the year, and the drainage system behaved admirably.

South Swamp—During the end of the year, work was commenced on the construction of an earth contour drain along the northern border of the south swamp. This drain is designed to lead off by a separate channel the storm water from the township which formerly discharged into the swamp. It remains to be seen how this drain will function during the next *Masika*.

A few more of the Eucalyptus trees were destroyed by white ants despite every effort to save them. The remaining trees, however, are healthy and have now attained a good size.

Foreshore—The Mangrove swamp to the north of the pier was found to be a prolific breeding ground for *Aedes pemiensis*, the salt-water breeding mosquito. Steps were taken to drain the area, which is only flooded at the highest tides. As a result there was a considerable reduction in the extent of the water logged ground, but a better means of combating the nuisance would probably be to fill the depression with earth from the adjacent hillside.

Cesspits and undrained swamp areas were regularly oiled.

TABLE No. 11.

Comparative table showing collections of mosquito larvæ found in the township of Mkoani.

	1931.	1932.	1933.
Anopheline	34	23	18
Culex	3	86	56
Stegomyia	20	45	28

TABLE No. 12.

	1931.	1932.	1933.
Notices served	17	30	24
Prosecutions	—	—	—
Convictions obtained	—	—	—

(b) EPIDEMIC DISEASES.

Zanzibar Town and Island.

Zanzibar.—Zanzibar was free from serious epidemic disease during the year, the most acute outbreaks being one of whooping cough: of which eighty-seven cases were notified, and one of measles: of which ninety-six were notified.

Small-pox.—On February 16th two cases of Small-pox were landed from a dhow in the harbour. Both patients were members of the crew and had developed the disease after their arrival in the port on February 10th.

The dhow was put in quarantine and passengers, who had landed previously, were traced and put under surveillance. No further cases occurred.

Bacillary Dysentery.—Remained endemic in the Central Prison from which fifteen cases were notified, including one Sonne type.

Outside the Prison, 10 cases of bacillary dysentery were reported of which two occurred in the Ziواني Police Lines.

Amæbic Dysentery.—Two cases were notified during the year.

Enteric Group.—Eighteen cases of Typhoid Fever were reported during the year, mostly in February and March.

Mumps.—Was mildly endemic throughout the year, twenty cases in all being notified.

Chicken-pox.—There were only sixteen cases during the year.

Measles.—Ninety-six cases of measles were reported during the year, of which 37 occurred at the Ziواني Police Lines.

Tuberculosis.—This is the subject of a separate report by the Tuberculosis Officer. (see page 49).

Beri-beri.—One case was notified during the year.

Puerperal Septicæmia.—Four cases were reported during the year.

Leprosy.—Ten cases in all were notified.

Number of premises visited for preventive measures and reports	249
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Number of premises disinfected	45
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Wete.—No serious outbreaks of epidemic disease occurred during the year.

Small-pox.—No cases during the year. Two hundred and ninety-seven persons were vaccinated. All mail steamer passengers, dhow crews and passengers, arriving at or leaving Wete were inspected, and unprotected persons vaccinated.

Chicken-pox.—Two cases occurred during the year.

Tuberculosis.—The following table shows the number of cases notified since 1929:—

1929	27
1930	6
1931	18
1932	7
1933	9
	67

Out of this total, 15 deaths have been definitely recorded; one was sent to Walezo Poor House. Among the new cases, five were Wanyamwezi, two Swahilis, two Arabs.

Dysentery.—One case (amœbic) from Wete Township.

Mumps.—One case was notified during the year.

Leprosy.—Five cases were notified during the year, and segregated at the Leper Asylum on Funzi Island.

Chake Chake.—*Small-pox*.—One case occurred at Matuleni in the District of Chake Chake. 2,475 vaccinations were performed during the year.

Tuberculosis.—Thirteen cases of tuberculosis including eleven cases of pulmonary tuberculosis, one spine tuberculosis and one tuberculosis glands (neck).

Dysentery.—Three cases of dysentery mainly of bacillary type were notified during the year. All were sporadic.

Measles.—Three cases of measles were reported during the year.

Chicken-pox.—Two cases occurred during the year.

Whooping Cough.—Three cases were notified during the year.

Leprosy.—Two cases were reported during the year and both of them were segregated at the Leper Asylum, Funzi Island.

Mkoani.—

Tuberculosis	9
Leprosy	5
Dysentery	3
Mumps	2
Whooping Cough	2
Chicken-pox	1

VACCINATION RETURN FOR 1933.

Months	Town	Steamers	Dhows	Quarantine	Mkokotoni and District	Chwaka and District	Wete	Chake Chake	Mkoani	Total
January	231	121	208	...	...	...	8	1	33	602
February	590	70	1,392	...	...	...	10	667	31	2,760
March	363	36	238	...	...	...	10	929	217	1,793
April	258	26	90	...	...	...	18	698	37	1,127
May	353	27	16	...	...	...	8	4	31	439
June	299	22	18	...	...	...	4	10	9	362
July	737	19	19	...	...	...	9	1	37	822
August	2,298	5	19	...	...	...	42	41	212	2,617
September	1,445	33	17	...	...	...	84	76	48	1,703
October	385	36	53	...	...	...	89	25	27	615
November	627	44	39	...	...	...	10	10	...	730
December	681	56	95	...	...	...	5	13	...	850
Total	8,267	495	2,204	...	...	...	297	2,475	682	14,420

2. GENERAL MEASURES OF SANITATION.

(a) SEWAGE DISPOSAL AND DRAINAGE.

Zanzibar.—The old methods of disposal of sewage and waste water by means of cesspits and sullage pits are still in use in the great majority of houses in the town, though improved types of fittings are being adopted on a fairly large scale and new connexions continue to be made to what public drains exist.

House-holders in general would be glad to be rid of the recurrent expense of having pits emptied, which incidentally is a public and sanitary nuisance, and were there more public drains to which house drainage could be connected, their convenience and the public health would be served. There is a growing demand for water-borne sewage systems in public and private premises, but the lack of sufficient water supply and drainage facilities make such systems possible in only a limited number of instances. In cases where water-borne sewage installations are constructed, house-holders are required to provide septic tanks, and seven such which were constructed during the year are working satisfactorily.

The conditions of the creek and the dairy drainage continue to be unsatisfactory.

During the year the public latrine at the Market was reconstructed and provided with a septic tank.

Sullage pits and Cesspits.

	1931.	1932.	1933.
Number of sullage pits and cesspits (approximately)	6,093	6,084	6,079
" " " " " " constructed	24	17	16
" " " " " " abolished	33	22	20
" " " " " " cleansed or emptied	356	591	406

Drains.

	Public.			Private.		
	1931.	1932.	1933.	1931.	1932.	1933.
<i>Glazed earthenware drains.</i>						
Linear yards	17,092	18,514	18,574	—	—	—
Linear yards constructed	1,422	Nil	Nil	712	953	1,153
Linear yards repaired	575	Nil	Nil	416	246	142
<i>Storm-water earth drains.</i>						
Linear yards cleansed and graded	17,354	15,425	767	888	888	1,591

The following work was executed in compliance with nuisance notices.

New drainage schemes for private premises	115
New waste pipes fixed	143
Choked waste pipes cleansed	111
Choked public drains cleansed	55
Choked private drains cleansed	149
Public drains repaired	11
Private drains repaired	8
Public sullage pits emptied	101
Public sullage pits repaired	2
Private sullage pits emptied	183
Private sullage pits constructed	16
Private sullage pits repaired	34
Private sullage pits demolished	8
Private cesspits emptied	122
Private cesspits demolished	2
Approved covers provided for sullage and cesspits	75
Trapped gullies fixed	106
New 6-inch cast iron choo-pipes fixed	14
Choo-pipes repaired	4
Old masonry choo-pipes demolished	3
New sinks provided	24

Wete.—Further progress has been made in the drainage of private premises. Premises have been inspected, notices served and instructions given to owners regarding drainage work. All new drainage work is constructed with earthenware pipes and trapped gullies. Four mosques of various sects have been provided with proper drainage and sullage pits. One more sullage pit was constructed at the Shafii mosque, Kitutia, with re-inforced cement concrete inspection cover and one gully trap. There are still fourteen clerk's quarters provided with bucket latrines, which necessitated the removal and cleansing of 4,510 buckets of night soil by Prison labour.

A new public latrine which was in the process of construction last year has now been completed.

Chake Chake.—Further progress has been made in the drainage of private premises. Owners of premises have been served with notices and instructions given regarding the drainage work; all new drainage work is constructed with glazed earthenware pipes and trapped gullies.

Number of sullage pits with cement concrete covers constructed by Public Works Department	0
Number of sullage pits with cement concrete covers constructed by private individuals	26
Number of linear yards of glazed earthenware pipe drains with gully constructed by Public Works Department	0
Number of linear yards of glazed earthenware pipe drains with gully traps constructed by private individuals	345

There are still two subordinates' quarters—viz: Wireless and P.W.D.—and Government Officials' Latrines, provided with bucket system of disposal which necessitated the removal of 1,825 buckets of night-soil by Prison labour.

A new public latrine has been constructed this year near the public motor stand with accommodation for two males and one

female. This has filled a pressing need at the car park where all buses disembark and embark passengers.

(b) REFUSE DISPOSAL AND SCAVENGING.

Zanzibar.—As in previous years the greater part of the town refuse was disposed of by dumping in the old quarry. Owing, however, to frequent fires and the unpleasant smell in wet weather this method of uncontrolled dumping was altered during the year, and instead of filling to a depth of about 20 feet before covering, controlled dumping was instituted and the refuse covered at six feet from the bottom of the quarry.

Dumping of refuse, also to a depth of six feet, has been started in the Harbour Works excavation, where filling is required to prevent water standing in wet weather, and at Raha Kesho, Michenzani, Mbuyuni Creek, Gulioni and Mzambaraoni.

Number of men employed, daily average	180
Number of carts in use, daily average	54
Number of cartloads of refuse, removed, daily average	259.37
Number of cartloads of refuse, dumped, daily average	250.8
Number of cartloads of refuse, burnt, daily average	8.57
Accumulations of refuse, building debris, etc., removed by private owners in compliance with nuisance notices	104
New dust-bins provided by house-holders	416

Wete.—The amount of refuse removed continues to increase as shown in the following table:—

Cartloads of refuse removed during the last three years:—

1931.	1932.	1933.
4,952	6,513	7,872

Owing to the month of *Ramadhan*, a large quantity of refuse collected in Wete Town. Crude oiled has been sprayed on all possible fly-breeding sites near the incinerator, etc. Wires coated with tangle-foot for flies were regularly placed in various premises in the Township. The rail type of incinerator continues to function satisfactorily.

All tins, iron, etc., are first beaten flat and then taken to sea and dumped in deep water. At the end of the year 401 sacks of these had been dealt with.

Chake Chake.—More effort has been made in collecting refuse from the native areas, though it has been proved impossible with the existing labour to cope with all refuse from the native areas owing to increase of buildings and population.

Men employed to remove refuse	22
Carts at work daily	3
Loads of refuse removed (daily average)	15
Loads of refuse burnt (daily average)	2
Loads of refuse dumped (daily average)	13
Loads of manure removed (daily average)	.03
Dustbins provided by private house holders	5

The incinerator is nearly worn out and does not give satisfactory service.

Mkoani.—The incinerator is capable of disposing of all the refuse collected in the Township.

Cartloads of refuse removed during the last three years:—

1931.	1932.	1933.
3,882	3,248	4,616

(c) WATER SUPPLY.

ZANZIBAR.—PIPE-BORNE WATER :—

Source : Springs.	1931.	1932.	1933.
Number of linear yards of pipe line	62,026	62,026	62,026
Number of standpipes along roads	80	80	80
Number of standpipes in compounds and houses	523	528	556

TANKS :—

Public and Private—

Number underground	9	9	13
Number mosquito protected and served with pumps	—	—	5
Number above ground	2	2	7
Number mosquito protected	2	2	7
Number of 400 gallons capacity or less	—	—	312
Number above 400 gallons	2	2	—

Wete.—The existing waterworks continue to maintain an ample and good supply of water to the Township.

Chake Chake.—The water supply continues to be very unsatisfactory and is continually under suspicion. A chlorinating plant has however been ordered, which it is hoped will be functioning before the end of 1934.

Mkoani.—No further steps were taken during the year either towards the exploration or the conservation of a supply sufficient for a pipe conducted system. A new well was excavated near the market which helped a little to alleviate the water shortage, nevertheless water was at a premium during the drought period. All water had to be carried from the Jondeni and Sheriff Swamp sources, distances of about half a mile. Water was even brought from Chake Chake by motor car. During the period of greatest shortage, 12 pice per two *Debbis* was the current price.

(d) OFFENSIVE TRADES.

Under the Public Health Decree, 1929, any Offensive Trade or business as carried on so as to be injurious or dangerous to health is a nuisance.

Action was taken on three occasions regarding nuisances caused by the curing of skins on land near dwelling houses.

(e) CLEARANCE OF BUSH AND UNDERGROWTH.

Zanzibar.—During the year 407,473 square yards of bush and undergrowth were cleared by the Public Health Department. The amount of bush cut this year has been nearly doubled as compared with the previous year. This result has been obtained by more careful supervision and the daily checking of each labourer's task.

In addition to the above work 124 nuisance notices were served on private owners to clear the bush from their lands.

Wete.—During the year, 37,062 square yards of bush and undergrowth have been cleared and removed by the Public Health Department.

The Prisoners have also assisted in this work by clearing 84,091 square yards in addition to the above figures.

Chake Chake.—Particular attention was paid to bush clearance in various parts of the township and 433,213 square yards of bush have been cleared thereon.

Six thousand five hundred and sixty-eight tins, coconut shells, broken bottles, etc., have been collected and removed.

Mkoani.—During the year 375,326 square yards of bush were cleared by departmental labour.

(f) SANITARY INSPECTIONS.

The following table summarises the routine work of the inspectors:—

<i>Zanzibar Township</i> :—	1931.	1932.	1933.
Number of Sanitary Inspectors employed	5	6	6
Number of Junior Sanitary Inspectors employed	7	4	4
Number of visits to dwelling houses	476,954	471,904	350,798
Number of visits to hotels and bars	250	175	165
Number of visits to eating houses	6,147	5,295	2,977
Number of visits to lodging houses	5,152	4,663	2,282
Number of visits to aerated water factories	342	364	301
Number of visits to bakeries	428	594	425
Number of visits to foodstalls	9,694	8,057	6,188
Number of visits to cowsheds and dairies	4,373	3,450	975
Number of visits to godowns and garages	7,068	6,285	3,550
Number of visits to markets	1,601	1,576	1,460
Number of boats and dhows inspected for mosquitoes	5,529	8,217	3,091
Number of notices served to remove insanitary conditions	4,034	3,841	3,855
Number of notices not complied with at the end of the year	15	8	9
Number of nuisances abated	6,913	9,303	9,763
Number of prosecutions for sanitary offences	63	30	28
Number of houses cleaned out and disinfected	152	8	26
Number of drains, tanks and barrels oiled	4,179	4,616	3,852
Number of cesspools covered with cement concrete covers	52	43	41
Number of ruins cleaned out	46	80	41
Number of huts demolished	36	11	4
Number of paupers removed to Poor House	33	29	16
Number of paupers buried	56	49	48
Number of cases of infectious diseases removed to Isolation Hospital	11	—	30
Number of cases of Infectious Diseases notified and inspections made	—	—	359
<i>Wete</i> :—			
Sanitary Inspectors employed	1	1	1
Leper Attendant	1	1	1
Visits to dwelling houses	17,801	19,966	20,420
Visits to eating houses	139	939	536
Visits to aerated water factories	35	49	15
Visits to bakeries	66	166	63
Visits to foodstalls	127	190	200
Visits to godowns and garages	29	27	56
Visits to markets	581	573	362
Boats and dhows inspected for mosquitoes	211	398	651
Notices served to remove insanitary conditions	195	185	161
Notices not complied with at the end of the year	7	14	12
Nuisances abated	326	271	43
Prosecutions for sanitary offences	7	14	23
Houses cleaned and disinfected	—	—	—
Sullage pits emptied	1	8	5
Sullage pits covered with concrete covers	21	20	11
Paupers removed to Walezo	17	15	5
Paupers buried	11	10	7
Lepers sent to Funzi Asylum	12	8	—
Cases of infectious diseases notified and inspections made	20	50	24

Chake Chake :—

Number of Sanitary Inspectors employed	1	1	1
Number of visits to dwelling houses	38,614	27,829	30,074
Number of visits to eating houses	431	785	812
Number of visits to aerated water factories	95	41	52
Number of visits to bakeries	136	122	153
Number of visits to godowns and garages	145	—	831
Number of visits to markets	365	425	365
Number of boats and dhows inspected for mosquitoes	214	392	481
Number of notices served to remove insanitary conditions	61	152	176
Number of convictions obtained for not removing insanitary conditions	2	12	13
Number of houses cleaned out and disinfected	9	—	—
Number of drains, tanks, and barrels oiled	183	468	129
Number of sullage and cesspits oilings carried out fortnightly	60	133	154
Number of paupers removed to Walezo Poor House	8	13	20
Number of paupers buried	20	—	15
Number of lepers sent to Funzi Asylum	—	10	2
	(re-segregated)		
Number of cases of Infectious Diseases notified and inspections made	—	—	27

Mkoani :—

Number of Sanitary Inspectors employed	1	—	—
Number of Junior Sanitary Inspectors employed	—	1	1
Number of visits to dwelling houses	14,722	14,508	15,908
Number of visits to eating houses	130	88	493
Number of visits to aerated water factories	—	47	21
Number of visits to bakeries	74	91	85
Number of visits to foodstalls	204	467	667
Number of visits to godowns and garages	—	—	—
Number of visits to markets	365	366	365
Number of boats and dhows inspected for mosquitoes	341	140	204
Number of notices served to remove insanitary conditions	75	51	24
Number of notices not complied with at the end of year	18	1	—
Number of nuisances abated	69	235	93
Number of prosecutions for sanitary offences	5	3	—
Number of houses cleaned and disinfected	—	—	2
Number of drains, tanks and barrels oiled	272	303	428
Number of sullage pits emptied	4	3	—
Number of sullage pits covered with concrete covers	—	2	2
Number of sullage pits oiled weekly	9	16	16
Number of paupers removed to Walezo	1	10	18
Number of paupers buried	2	5	14
Number of lepers sent to Funzi	—	2	3
Number of cases of Infectious Diseases notified	19	150	22

3. SCHOOL HYGIENE.

Zanzibar.—The average daily attendance at the School Clinic was twenty-five, there being 3,046 new cases and 6,376 repetitions. The prevalent complaints were minor injuries, malaria, dental caries and coryza.

All school boys in the town were examined and the diseases and defects found were, when possible, treated at the Clinic or alternatively notified to parents through the School authorities.

The following table shows particulars of examination of boys in town schools.

TABLE A.

	Aga Khan School	Euan Smith Madressa	Govt. Central School
	Total examined 209 boys	Total examined 296 boys	Total examined 414 boys
Nutrition	8.2%	6.4%	2.1%
Cleanliness { Skin	10.0	8.1	22.9
{ Head	31.1	3.4	22.0
{ Body	21.5	0.3	20.3
Vaccinations	2.4	2.7	5.4
Teeth	78.5	55.1	54.5
Nose and throat	61.2	68.0	74.8
Tonsils	65.5	68.0	57.9
Adenoids	1.0	1.0	2.1
External eye disease	2.4	4.7	1.0
Vision—R {	0.5	0.3	1.0
—L {			
Ear disease	1.0	—	0.5
Hearing	1.5	—	—
Speech	1.0	—	0.2
Mental condition	1.0	0.6	1.0
Heart and circulation	17.2	14.5	53.8
Lungs	2.0	0.3	0.5
Nervous System	—	—	—
Rickets	9.6	1.4	0.2
Deformities	4.0	3.0	1.6
Lymphatic Glands	16.7	10.4	28.2
Spleen	22.0	14.5	48.0
Other disease or defect	13.4	9.1	20.0
Examination of blood M.P.	0.5	0.3	—
Examination of blood A.D.	1.0	—	13.2
Wax in ears	57.4	52.0	—

The following table shows the percentage of various defects discovered on routine examination of the pupils in District Schools:—

TABLE B.

			Donge	Kizinkazi	Makunduchi	Mangapwani	Muyuni	Mwera	Ndijani
Number examined	...	...	85	76	94	55	68	60	74
Nutrition	...	...	4.7	10.5	17.0	7.3	10.3	3.3	16.2
Lack of Cleanliness { Skin	...	...	8.8	6.6	18.0	20.0	20.6	21.6	18.9
{ Head	...	...	7.1	3.9	2.1	1.8	8.8	3.3	...
{ Body	...	...	1.2	5.3	1.1	...	13.2	3.3	8.1
Unvaccinated	...	...	17.6	15.6	26.6	34.5	23.5	43.3	4.5
Defective teeth	...	...	10.6	6.6	13.8	21.8	16.2	4.0	25.6
Enlarged Tonsils	...	...	17.6	14.5	20.2	16.4	20.6	20.0	5.4
Nose and Throat	...	...	10.6	2.7	11.7	9.0	5.9	1.7	2.7
Adenoids	...	...	1.2	...	2.1	...	2.9	...	...
External eye disease	...	...	1.2	...	1.1	...	1.5	1.7	...
Defective Vision	...	...	...	...	...	...	...	...	...
Ear diseases	...	...	...	...	8.5	1.8	2.9	6.7	...
Defective hearing	...	...	...	...	...	...	...	1.7	...
Defective mental condition	...	...	...	1.4	...	...	...	...	1.4
Disease of Heart or circulation	...	...	13.0	13.2	10.6	18.2	10.3	10.0	4.2
Lung disease	...	...	3.6	...	...	...	1.5	...	7.0
Disease of nervous system	...	...	...	...	...	...	...	...	...
Rickets	...	...	1.2	1.4	6.4	5.5	8.8	1.7	7.0
Deformities	...	...	...	2.7	1.1	...	...	...	...
Enlarged lymph glands	...	...	...	11.8	15.9	1.8	11.8	8.3	0.7
" spleen	...	...	36.5	39.5	31.9	25.5	61.8	23.3	32.4
Other diseases	...	...	4.7	23.6	25.3	5.5	19.1	10.0	16.2
Wax in ear	...	...	1.2	3.9	52.1	...	8.8	...	4.2
Malaria	...	...	3.6	1.4	2.1	...	...	...	...
A. D.	...	...	14.2	6.6	12.8	1.8	13.2	1.7	...
Ascaris	...	...	8.8	3.9	8.5	...	1.5	...	0.7

Wete.—The following table shows the percentage of defects found on examination of the pupils at Wete and Matangatwani Schools.—

	Wete School	Matangatwani School
	Total examined	Total examined
	54	45
Defective nutrition	12	10
Lack of cleanliness	15	23
Defective teeth	32	18
Enlarged tonsils	—	—
Enlarged lymphatic glands	2	7
Enlarged spleen	24	23
Other diseases	9	10
Malaria parasites present	11	4
Ankylostomiasis	7	9

Chake Chake.—The pupils of the various schools were examined in the usual routine way. The general health and physique of the pupils is definitely improving as the years go by, due probably to the institution of treatment after the annual health examinations. Closer contact with the parents has, in many cases, resulted in improvement in diet and home conditions.

As far as individual diseases are concerned there is nothing exceptional which has not been commented upon in last year's report.

4. LABOUR CONDITIONS.

Labour being almost entirely agricultural and seasonal there is no scope for the sanitation of permanent camps. Temporary concentrations of labour during the clove season are dependent on the District Dispensaries for Medical aid.

5. HOUSING AND TOWN PLANNING.

Zanzibar.—Under the Public Health (Houses Let in Lodgings) Rules, 1933, considerable improvements were effected in the premises occupied by the poorer section of the population. It was found that overcrowding of rooms was rare, but the sanitary condition of the premises were far below standard.

During the year the question of hut building and the congested native areas of the Township was considered. The former hut plot measuring 50 feet by 25 feet was said to create hardships in some cases, and after consideration it was decided that there should be a minimum standard size for plots of 30 feet by 25 feet surrounded by 10 feet sanitary space; that as a rule only two-thirds of the area should be covered by any building; and that new areas for huts should be pegged out in plots of not less than minimum standard, and space for roads should be reserved.

The following works were executed in compliance with nuisance notices:—

Premises lime-washed	41
Walls repaired	21
Floors repaired	66
Latrines isolated from dwelling rooms	15
Wood-work of premises painted	21
Roofs repaired	7
New windows provided	29
Premises closed for habitation	26
Fowls removed from dwellings	51
Goats removed from dwellings	28
Donkeys removed from dwellings	16

Wete.—The number of houses in the Township continues to increase, as does ribbon development along the main roads beyond the Township boundaries.

With reference to paragraph 3 (recommendations) of the Town Planning Reports on Wete, 1932, paragraph 2 (1, b) Baraste Kipande road, was constructed by the P.W.D. from near the Police Station down to the ferry. This is being metalled and covered with colas, and a set of steps down to the ferry has also been constructed.

The P.W.D. have constructed a retaining wall in the Public Market behind the fish section 65 feet long, and a new drain 100 feet long of 6 inches glazed earthenware pipes has been laid from the existing manhole to the bottom of the market swamp with two inspection chambers. A new open cement drain 180 feet long running from the last of these inspection chambers to the existing open drain in the market swamp has been constructed.

Two inspection chambers have been constructed at the Customs Swamp.

Two hundred feet of drain with two inspection chambers were laid by the P.W.D. at the back of the quarters No. 28 to 32 Baraste-Kipande, discharging into a soakway pit containing 10 perforated colas drums.

Earthenware pipe drains were laid from the sullage pit at the Hospital to the open cement drain by the Customs Swamp. The concrete catch-pit was hermetically sealed to prevent ingress of mosquitoes.

Cast iron pipe drains were constructed across the road to the Kizimbani Bonde at Kizimbani.

Chake Chake.—The new village of Madungu on the outskirts of the town is beginning to offer hope of at last getting more air and sunlight into the town, and insanitary huts, etc., in the centre of the town are not allowed to be renewed, but a site at Madungu is offered instead. A number of these have been accepted already.

The great bar to the popularity of the new village is its lack of a water supply. It is hoped that this difficulty may be overcome next year when the whole question of water supply is to be dealt with.

The number of building applications dealt with during the year was 257.

Mkoani.—More progress was made with the model village at Weleni. One hundred and nineteen building applications were dealt with by the Town Planning Board.

6. FOOD IN RELATION TO HEALTH AND DISEASE.

(u) INSPECTION AND CONTROL.

Zanzibar.—All food exposed for sale is subject to inspection by the District Sanitary Inspectors. Considerable improvements were effected in shops under the Public Health (Preparation, Storage and Transmission of Food) Rules, 1932. In compliance with notices 33 cupboards or show-cases were provided by retailers for the protection of food, especially dates, from contamination by dust and flies.

During the year the following foodstuffs were condemned and destroyed:—

Fish	854 lbs.
Dry fish	4,745 lbs.
Fruit	1,829 baskets
Dates	10,565 lbs.
Onions	1,805 lbs.
Meat	324 lbs.
Garlic	50 lbs.
Vegetables	12 lbs.
Potatoes	380 lbs.
Vermicelli	71 packets
Eggs (imported)	500 no.
Sweets	270 lbs.
Condensed milk	134 tins

In addition to the above 235,000 cigarettes were found in an unwholesome condition, and were destroyed.

Wete.—Food exposed for sale was inspected frequently and sellers of cooked food provided themselves with 17 cupboards with wire gauze sides to protect the food from flies and dust.

During inspections the following articles found to be unsound were condemned.

Meat	4 carcasses (bulls) with measles
Meat	6 lbs.
Lungs	101 lbs.
Livers	27 lbs.
Fresh fish	4 pieces
Coconuts	52 no.

Chake Chake.—During the inspections the following were found to be unsound and were condemned:—

Lungs	126
Kidneys	2
Beef	10 lbs.
Livers	9
Spleens	9
Fish	30 lbs.
Hearts	7
Windpipes	3
Intestines	2
Mutton	12 lbs.
Aerated water bottles	10
Butter	6 tins
Cocoa	3 tins
Dates	16½ lbs.

(b) MARKETS.

Zanzibar.—The Central Markets were inspected daily, and ten sweepers were regularly employed in keeping the premises clean. The boiler was overhauled, and now a constant supply of hot water is available for cleansing purposes.

At the Milk Depot 21,473 samples of milk brought by milk vendors from the shambas were tested by a lactometer. This is a considerably increase compared with the 14,078 samples tested during the previous year and is due to increased supervision of dairymen.

Wete.—The Market was visited daily and all meat, fish and other foodstuffs examined. The open space within the market area was marked out into six feet by four feet rectangles with four feet space all round and stables not exceeding these dimensions were permitted to be placed therein. Lessees were required to limit their stalls to a table and bench, and no boxes were allowed on the ground so that sweeping was rendered easy and the cleanliness of the market greatly improved.

Chake Chake.—The market was visited daily and all meat, fish and other foodstuffs inspected.

General improvement to market is most essential. A special part or place where auction sales can be held or material for auction exposed is an urgent necessity.

(c) AERATED WATER FACTORIES.

Zanzibar.—Regular inspections of all premises were made. Ninety-eight samples from the four factories were taken and submitted to the Government Chemist for examination. The results were as follows:—

4 Samples free from metallic contamination.						
22	„	contained copper	1/100th	grain	per	gallon
34	„	„	1/70th	„	„	„
24	„	„	1/50th	„	„	„
10	„	„	1/35th	„	„	„
2	„	„	1/30th	„	„	„
2	„	„	1/20th	„	„	„

Action was taken in all cases of high metallic content, and manufacture stopped until the machinery had been overhauled, and the source of metallic contamination removed.

Wete.—Samples analysed from the two Wete factories. From one the samples were satisfactory, but from the other the samples showed too high a percentage of copper in the sweetened mineral waters; the manufacture of these was prohibited. The Soda Water was found to be fit for sale.

Chake Chake.—The one Factory in Chake Chake was regularly inspected and six bottles for samples were sent to the Government Chemist for analysis and all were found to be satisfactory.

A second Factory opened in December but owing to the high copper content of its waters, was not opened for business by the end of the year.

Mkoani.—One factory was regularly inspected.

(d) SLAUGHTER HOUSES.

Zanzibar.—(See Veterinary Division Report).

In accordance with the Public Health (Preparation, Storage and Transmission of Food) Rules, 1932, all butchers provided covered meat carts of a design approved by the Health Officer for the conveyance of meat from the Slaughter House to the Markets.

Wete.—The two butchers carrying on business in Wete provided two carts of an approved type for the conveyance of meat from the Slaughter House to the Market.

The following table shows the numbers of animals slaughtered in each of the past three years:—

	1931.	1932.	1933.
Cattle	143	208	181
Goats	187	154	173
Sheep	19	8	5

Mkoani.—The following animals were slaughtered in the Government Abattoir during 1933:—

Cattle	82
Goats	68

7. REDUCTION OF VERMIN.

Zanzibar.—(a) Rats.—Owing to retrenchment of staff trapping was carried out on a reduced scale. 13,998 rats were trapped during the year, as compared with 22,448 trapped in 1932.

(b) Flies.—Thirty-six fly traps distributed in all the sanitary districts of the Township succeeded in keeping the numbers of flies very low. The traps were inspected and re-baited daily.

Wete.—(a) Rats.—Traps have been set daily in all parts of the Township resulting in the destruction of 2,845 rats.

(b) Flies.—The burning of all refuse; trapping, crude oil spraying of possible breeding places and the regular removal of animal droppings resulted in an almost complete absence of flies throughout the year.

(c) Pariah dogs.—Fifty-three dogs were destroyed by poisoned baits during the year.

Chake Chake.—(a) Rats.—Trapping of rats was continued and resulted in the destruction of 2,202 rats during the year.

(b) Flies.—Eight fly traps have been in constant use throughout the year with the same success as previously reported.

(c) Pariah Dogs.—One hundred and nineteen were destroyed by poisoned baits during the year.

(d) Cats, forty-two were destroyed by poisoned baits and eight were destroyed as a result of trapping during the year.

Mkoani.—(a) Rats.—One thousand and twenty-eight rats were caught and destroyed.

(b) Flies.—The refuse dump was oiled regularly. Fly traps were set throughout the year with good result.

(c) Pariah Dogs.—Seventy-one dogs were destroyed by poisoned baits in Mkoani, and 103 in Kengeja and Jambangome.

(B). MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

As in previous years lectures and demonstrations have been given to groups of school boys and others at the Museum Annexe, while special instruction in hygiene is given to pupils in the Teachers Training School. The Jeanes Teacher continues to give lantern lectures in the districts in the causes and prevention of the main endemic diseases.

(C) TRAINING OF SANITARY PERSONNEL.

Lectures and practical instructions were given to Inspectors and "Learners" as described in previous reports.

(D) RECOMMENDATIONS FOR FUTURE WORK.

ZANZIBAR ISLAND.

Mosquito and Insect-borne Diseases.—Further drainage to prevent flooding during the rains particularly at Kwa Khani and Ziواني should be considered. In both these areas successful drainage could only be obtained if some method of pumping were adopted.

The drainage of the Migombani and Sebuleni swamps and the Mto Mpepo should also be considered.

Infectious Diseases.—*Small-pox*.—The removal of the Infectious Disease Hospital to a site outside the town is highly desirable, the town having spread round it since its construction. At present there is a grave risk of the town becoming infected when patients suffering from Small-pox are being treated at this hospital.

Tuberculosis.—The provision of a Sanatorium or a site for a consumptives village would be of value in making the removal of infective tuberculosis patients from close contact with others more frequent than is at present possible.

Leprosy.—Recommendations with regard to leprosy will be made in due course when the situation with regard to this disease has been investigated by Dr. T. B. Welch, the expert who was sent out early this year by the British Empire Leprosy Relief Association.

General Sanitation.—An increased distribution of water, especially in newly developed areas in the Zanzibar Township is necessary.

Standard requirements and a plan of development for town drainage are needed.

Maternity and Child Welfare.—Recommendations on this subject in previous reports still hold good.

PEMBA ISLAND.

Mosquito and Insect-borne diseases.—The Chachani swamp at Chake Chake should be drained. This would probably entail the provision of some method of pumping water to the creek as a considerable area of the swamp is below high tide level.

General Sanitation.—(a) Drainage.—Owing to lack of surface water drainage the thickly populated native area in the Wete Township becomes flooded during the rains and a drainage scheme is necessary. The spring on the north of Majimbikhani should be drained into the creek.

(b) Water Supply.—The water supply in Wete Township should be extended. This might be borne in areas above the level of the water tower by the use of a ram or windmill pump.

The remarks in the 1931 Report regarding the Water Supply of Chake Chake and Mkoani still hold good.

J. M. SEMPLE,

Acting Deputy Director of Sanitary Services.

IV. PORT HEALTH WORK AND ADMINISTRATION.

The accompanying table shows the amount of shipping dealt with by the Port Health Service during 1933. Throughout the year all deck passengers for Zanzibar arriving from Bombay, as well as all passengers arriving in dhows and immigrant mainland labourers were examined, and, when necessary, vaccinated.

PORT SANITATION RETURN, 1933—STEAMERS.

Months.	Arrivals.			Ships quarantined.	Ships claytonised.	Passengers landed.	Passengers under surveillance.	Number of passengers vaccinated	Passengers placed in quarantine.
	British.	Foreign.	Total.						
January	29	16	45	..	..	1,114	..	121	..
February	22	16	38	..	..	1,057	..	70	..
March	26	16	42	..	..	1,047	..	36	..
April	29	17	46	..	..	1,268	..	26	..
May	31	18	49	..	..	778	..	27	..
June	23	17	40	..	..	193	..	22	..
July	29	14	43	1	1	757	..	19	14
August	33	18	51	..	..	1,272	..	5	..
September	26	17	43	..	..	859	..	33	..
October	33	21	54	..	..	749	..	36	..
November	24	17	41	..	..	741	..	44	..
December	27	17	44	..	..	1,080	..	56	..
Total ..	332	204	536	1	1	10,915	..	495	14
Total for 1932 ..	327	189	516	..	..	14,558	..	372	..

PORT SANITATION RETURN, 1933—DHOWS.

Months.	Arrivals.			Dhows quarantined.	Dhows claytonised.	Passengers under surveillance.	Number of passengers vaccinated.	Passengers placed in quarantine.	Passengers landed.
	British.	Foreign.	Total.						
January	66	28	94	..	..	..	208	..	539
February	56	63	119	1	1	22	1,392	22	1,489
March	70	83	153	..	..	..	238	..	412
April	81	..	81	..	..	..	90	..	277
May	49	..	49	..	..	..	16	..	133
June	46	..	46	..	..	..	18	..	78
July	47	..	47	..	..	..	19	..	158
August	59	..	59	..	..	..	19	..	246
September	53	..	53	..	..	..	17	..	190
October	58	3	61	..	..	..	53	..	227
November	53	3	56	..	..	..	39	..	159
December	67	7	74	..	..	..	95	..	179
Total ..	705	187	892	1	1	22	2,204	22	4,087
Total for 1932 ..	781	220	1,001	..	..	..	1,711	..	4,022

V. MATERNITY AND CHILD WELFARE.

The Zanzibar Maternity Association continued its activities successfully during the year, the Report of this Association is included as Appendix IV. (page 77).

VI. HOSPITALS AND DISPENSARIES.

(A) OUT-PATIENTS.

The total number of attendances during this year at all Government Dispensaries was 502,672, of which 157,167 were new cases and 345,505 re-attendances. These figures show an increase of 51,416 in re-attendances.

The following table compares the number of new cases treated at each dispensary with those for the previous two years:—

ZANZIBAR ISLAND.		Cases treated.		
<i>Zanzibar Town</i>		1931.	1932.	1933.
European	...	443	465	557
Native and Asiatic	...	20,042	18,858	19,682
Prison Infirmary	...	1,386	874	880
Police Lines	...	2,695	2,246	2,283
Lunatic Asylum	...	—	—	47
Mwembeladu	...	18,004	17,403	18,408
School Clinic	...	3,135	3,296	3,046
Tuberculosis Clinic	...	233	347	350
Home Treatment Service	...	766	855	731
Infectious Diseases Hospital	...	47	12	27
Travelling	...	—	4,602	7,510
<i>Northern District.</i>				
Mkokotoni	...	2,723	2,579	4,201
Chaani	...	3,009	3,252	2,989
Mahonda	...	295	1,572	1,765
Mbiji	...	2,575	3,075	3,499
Mangapwani	...	2,122	2,030	2,555
Mkwajuni	...	307	352	326
<i>Southern District.</i>				
Chwaka	...	1,537	1,678	1,777
Kizimkazi	...	2,046	1,403	1,249
Uzini	...	2,626	2,952	2,753
Kizimbani	...	2,445	3,072	3,724
Walezo	...	5,431	4,541	5,926
Tunguu	...	1,775	1,343	1,367
Bweleo	...	2,304	1,969	1,897
Mwera	...	2,402	3,346	3,689
Bububu	...	2,341	2,087	1,504
Selem	...	4,451	4,337	3,442
Makunduchi	...	7,030	6,875	5,832
Ndijani	...	—	—	305
Temporary Treatment Centres	...	5,487	—	—
PEMBA ISLAND.				
<i>Wete District.</i>				
Wete	...	6,028	5,788	7,644
Matangatwani	...	2,282	2,658	3,632
Mzambaraoni	...	2,391	2,579	3,003
Kinazini	...	—	1,789	2,982

Chake Chake District.

Chake Chake	... 12,831	14,143	16,466
Ole	... 1,806	2,432	2,176
Stambuli	... 2,793	1,911	2,631
Banani	... 541	1,235	—
Ziwani	... —	223	—

Mkoani District.

Mkoani	... 6,653	5,570	9,026
Kengeja	... 2,711	3,337	3,611
Jambangome	... 2,712	1,317	1,067
Kangani	... 2,293	1,772	2,608
	140,698	140,175	157,167

DISTRICT DISPENSARY SERVICE.

In Zanzibar Island, Dr. Pitchford was in charge of this Service throughout the year. In Pemba, the Medical Officers were in charge of the dispensaries in their respective districts.

The Medical Officer in Zanzibar with the assistance of one senior native dispenser also undertakes the training of all dispensers for both islands and supervises the Home Treatment Service in Zanzibar Town. During the year three pupils passed the Preliminary Examination and three junior dispensers passed the second examination required after two years satisfactory service before promotion to the permanent staff. Two senior dispensers underwent a course to refresh their knowledge. During the year Jambangome Dispensary in Pemba and Mahonda Dispensary in Zanzibar were closed down. In Zanzibar a Clinic at the Comorian School was instituted and another at Muyuni School in the south of the island. The agricultural dispensary at Machui was transferred to Kizimbani. The district dispensaries proper showed a slight increase in the number of attendances.

At the Central Dispensary alterations and renovations to rooms in the Old Jail were carried out in the early part of the year. As a result a satisfactory lecture room was provided for the training of Native Dispensers and an office was provided for the Medical Officer in charge of District Dispensaries.

HOME TREATMENT SERVICE.

This service was in force in the Zanzibar Town during the whole year. The Native Dispensers undergoing training, and as part of their training, visited native patients unable to attend either of the town dispensaries as out patients. In all 731 cases were attended during the year, 56 of the patients were removed to Hospital and 44 to the Poor House. The remainder were treated in their own homes under the supervision of a Medical Officer. The service has been undoubtedly of great value in bringing to light cases amongst the old and infirm, who otherwise would have received no medical aid whatever.

(B) IN-PATIENTS.

The following table shows the number of patients treated and deaths occurring in each Government Hospital during the past and two previous years:—

ZANZIBAR ISLAND.	1931.		1932.		1933.	
<i>Zanzibar Town.</i>	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
European	76	—	59	—	66	2
Native and Asiatic	1,587	156	1,661	141	1,642	113
Prison Infirmary	196	12	140	20	98	4
Police Lines	140	1	99	2	57	—
Infectious Diseases	29	1	12	—	27	1
Lunatic Asylum	—	—	—	—	16	13
<i>Northern District.</i>						
Mkokotoni	125	—	121	—	135	—
<i>Southern District.</i>						
Walezo Poor House	430	181	421	151	503	174
Selem	67	1	49	1	30	—
PEMBA ISLAND.						
<i>Wete District.</i>						
Wete	554	33	626	31	622	31
<i>Chake Chake District.</i>						
Chake Chake	543	46	752	34	653	29
<i>Mkoani District.</i>						
Mkoani	236	11	287	7	668	20
	3,983	442	4,227	387	4,517	387
Cases remaining from previous year	283	—	307	—	298	—
Total number of cases treated and deaths	4,266	442	4,534	387	4,815	387

The more important causes of admission and death during the year were as follows:—

	Cases. Deaths.			Cases. Deaths.	
Enteric	5	—	Duodenal Ulcer	9	—
Malaria	233	3	Ankylostomiasis	189	16
Blackwater	5	3	Appendicitis	20	3
Small-pox	3	1	Hernia	228	7
Influenza	39	—	Hepatitis	6	1
Dysentery	33	5	Liver Cirrhosis	11	1
Tetanus	3	1	Peritonitis	9	6
Tuberculosis	164	52	Nephritis	27	8
Cancer	15	4	Hydrocele	224	2
Encephalitis	—	—	Puerperal State	63	3
Meningitis	2	1	Gangrene	23	5
Apoplexy	9	7	Elephantiasis	32	—
Paralysis	20	7	Fractures	59	3
Heart Diseases	48	15	Other Injuries	277	2
Broncho-pneumonia	21	6	Senile Debility	156	105
Pneumonia	51	15	General Debility	106	26

1. ZANZIBAR EUROPEAN, ASIATIC AND NATIVE HOSPITALS.

Dr. Young, the Acting Resident Surgical Officer was in charge of these hospitals from January 9th to August 9th. Dr. Turner acted as his assistant from January to July. Dr. Vassallo, the Resident Surgical Officer, resumed his duties when he returned from leave on 10th August. In addition the medical staff consisted of a Matron, 3-5 Nursing Sisters, an Assistant Surgeon, for the whole of the year, 1-2 Sub-Assistant Surgeons and 2-3 Dispensers.

The following is a summary of the work performed during the year as compared with the previous two years:—

	1931.	1932.	1933.
In-patients	1,663	1,732	1,642
Out-patients, new cases	20,608	19,217	20,589
Out-patients, re-attendances	61,294	64,830	67,274
Out-patients, total attendances	81,902	84,047	87,863
Operations, major	955	978	788
Operations, minor	1,039	1,461	1,911
Injections and irrigations	5,140	6,187	7,382
Medical Boards	41	46	33
Medical examinations	221	205	129
X-ray photographs	707	539	268
X-ray screenings	11	17	6
X-ray Therapy treatment	—	—	4
Post-mortem examination	28	20	3
Visits to patients	2,651	1,329	1,120
Ante-natal examinations	175	105	156

Among the major operations performed were appendicectomy 11, laparotomy 7, gastro-jejunostomy 8, hæmorrhoids 29, hernia 121 (radical cure 110, strangulated 11), hydrocele, radical cure 104, elephantiasis 19, orchidectomy 26, external urethrotomy 5, salpingectomy 4, ovariectomy 2, hysterectomy 2, amputations 6.

The deaths following operations numbered 31 as compared with 50 in 1932 and 49 in 1931.

(a) EUROPEAN HOSPITAL.

Of the 66 patients admitted, 35 were officials and 31 non-officials. The more important causes of admission were:—

Enteric	1	Lymphangitis	—
Malaria	21	Bronchitis	—
Influenza	5	Tonsillitis	—
Dysentery	2	Parturition	6
Hæmorrhoids	—	Injuries	5
Appendicitis	5	Cellulitis	1
Cholecystitis	1		

(b) ASIATIC AND NATIVE HOSPITAL.

The patients admitted to this hospital during the year numbered 1,642, consisting of 288 Arabs, 250 other Asiatics and 1,104 Africans with a daily average in hospital 87.10. During 1932 the admissions numbered 1,673 consisting of 203 Arabs, 233 other Asiatics and 1,237 Africans, with a daily average of 77.44. There was therefore slight decrease in the number of admissions, but a slight increase in the daily average in hospital.

The following were the more important causes of admission and death:—

	Cases.	Deaths.		Cases.	Deaths.
Typhoid	4	—	Pneumonia	24	7
Malaria	96	2	Pleurisy	7	—
Blackwater fever	1	1	Gastro-jejunal ulcer	1	—
Influenza	21	3	Duodenal ulcer	9	—
Dysentery	7	2	Ankylostomiasis	48	5
Tetanus	1	1	Appendicitis	9	1
Tuberculosis	34	6	Hernia	121	6
Syphilis	29	1	Nephritis	15	4
Gonorrhœa	39	1	Hydrocele	110	2
Filariasis	19	—	Ovarian cyst	3	—
Cancer	8	2	Uterine fibroid	6	2
Other tumours	12	—	Parturition	31	1
Meningitis	2	1	Gangrene	13	4
Apoplexy	7	5	Abscess	62	2
Heart disease	11	2	Elephantiasis	23	—
Hæmorrhoids	30	—	Diseases of bones	13	—
Lymphadenitis	47	1	Burns	15	1
Bronchitis	20	2	Fractures	34	1
Broncho-pneumonia	13	3	Other injuries	89	—

2. MKOKOTONI AND SELEM HOSPITAL.

Native dispensers were in charge of these hospitals throughout the year, the Medical Officer in charge of the District Dispensary Service making periodical visits. As far as possible all serious cases are removed to the Zanzibar Town Hospital. The following is a summary of the work done at Mkokotoni as compared with the two previous years:—

	1931.	1932.	1933.
In-patients	125	121	135
Daily average	4.46	5.36	3.64
Out-patients, new cases	2,723	2,579	4,201
Out-patients, re-attendances	3,226	4,501	5,971
Minor operations	47	48	60
Injections	368	139	532
Vaccinations	1,417	151	311

At Selem there were 30 in-patients (daily average 1.17) 3,442 out-patients, 7,601 re-attendances, 89 injections and 38 vaccinations.

3. CHAKE CHAKE HOSPITAL.

Dr. McCarthy was in charge of this hospital throughout the year. In addition to the Medical Officer, the medical staff consisted of a Nursing Sister, a Sub-Assistant Surgeon and a Dispenser. The Medical Officer had also two district dispensaries under his control, and all sanitation duties connected with Chake Chake township and district.

The following is a summary of the work performed in connexion with the hospital and dispensaries as compared with the two previous years:—

	1931.	1932.	1933.
Out-patients, new cases, Chake Chake	12,831	14,143	16,466
Out-patients, new cases, districts	3,380	19,944	4,807
Out-patients, re-attendances	24,409	31,640	43,361
Out-patients, total attendances	40,620	51,584	64,634
In-patients	543	752	653
Operations, major	166	221	267
Operations, minor	611	681	641
Injections	3,421	3,565	3,227
Vaccinations	1,995	1,605	2,475
Laboratory examinations	1,393	3,934	1,814

The average daily number in Chake Chake Hospital was 30.65 as compared with 28.2 in 1932 and 23.72 in 1931 and 23.07 in 1930. The more important causes of admission and death were as follows:—

	Cases. Deaths.			Cases. Deaths.	
Malaria	33	—			
Blackwater	—	—	Hernia	48	—
Gonorrhœa	9	—	Nephritis	2	1
Syphilis	5	1	Retention of urine	8	—
Dysentery	2	1	Hydrocele	76	1
Tuberculosis	13	1	Parturition	2	—
Filariasis	22	1	Uterine affections	7	1
Cancer	3	—	Abscess	11	1
Heart disease	7	2	Cellulitis	24	2
Bronchitis	8	—	Ulcers	108	—
Pneumonia	9	3	Elephantiasis	3	—
Broncho-pneumonia	2	1	Diseases of bones	3	—
Pleurisy	1	—	Fractures	7	—
Appendicitis	4	1	Injuries	41	—
Ankylostomiasis	24	4			

Among the major operations performed were hæmorrhoids 11, hernia 44 (radical cure 40, strangulated 4), hydrocele, radical cure 71, elephantiasis 4, orchidectomy 6, transplantation of ureters 1, appendectomy 4, laparotomy 1, hysterectomy 1.

4. MKOANI HOSPITAL.

Dr. Nicklin was in charge throughout the year. The medical staff consisted of one Sub-Assistant Surgeon. The Medical Officer had three district dispensaries under his control and also the sanitation of the township.

The following is a summary of the work performed in connexion with the hospital and dispensaries as compared with the two previous years:—

	1931.	1932.	1933.
Out-patients, new cases, Mkoani	6,653	5,570	9,026
Out-patients, new cases, districts	7,716	5,570	9,026
Out-patients, re-attendances	26,388	27,415	40,095
Out-patients, total attendances	40,757	39,415	56,407
In-patients	236	287	668
Operations, major	22	33	113
Operations, minor	608	321	386
Injections	347	522	1,305
Vaccinations	1,943	1,935	679

The average daily number in hospital was 22.56 as compared with 11.22 in 1932.

The more important causes of admission and death were as follows:—

	Cases. Deaths.			Cases. Deaths.	
Malaria	31	1	Fractures	5	—
Blackwater fever	1	—	Chronic peritonitis	3	1
Ankylostomiasis	48	1	Injuries	38	—
Tuberculosis	8	3	Hernia	16	—
Broncho-pneumonia	2	—	Hydrocele	51	—
Pneumonia	4	—	Elephantiasis	6	—
Dysentery	3	—	Chronic nephritis	1	1
Heart disease	2	—	Epithelioma of lip	1	1
Orchitis	14	1	Septic arthritis	1	1
General debility & senility	19	5	Empyema	1	1
Ulcers (inc : Tropical)	247	—	Septicæmia	2	2
Pyelitis acute	1	1			

Among the major operations performed were, hernia 18 (radical cure 15, strangulated 3), elephantiasis 6, hydrocele 54, hæmorrhoids 1, appendicectomy 2, laparotomy 1, castration 3, amputation 1, sub-diaphragm abscess 1.

The new ward was opened in January and has been filled to capacity throughout the year. A new Out-patient Dressing Room, and two small accident wards were also constructed during the year. These have added considerably to the amenities of the hospital and were a great boon during the clove-picking season.

5. WETE HOSPITAL.

Dr. Semple was in charge of this hospital from January 1st to 18th October, and Dr. McCarthy was in charge up to the end of year. In addition to the Medical Officer, the medical staff consisted of a Nursing Sister and a Sub-Assistant Surgeon. The Medical Officer had also under his control the Funzi Leper Settlement, three district dispensaries and all sanitation duties connected with Wete township and district.

The following is a summary of the work performed in connexion with the hospital and dispensaries as compared with the two previous years:—

	1931.	1932.	1933.
Out-patients, new cases, Wete	6,040	5,788	7,644
Out-patients, new cases, district	6,423	7,045	9,617
Out-patients, re-attendances	22,301	29,576	48,716
Out-patients, total attendances	34,764	42,409	75,977
In-patients	554	646	622
Operations, major	81	161	152
Operations, minor	329	301	342
Injections	650	569	641
Laboratory examinations	1,274	496	498
Vaccinations	3,251	650	297

The average daily number in hospital was 28.1 as compared with 28.12 in 1932 and 17.8 in 1931. The more important causes of admission and death were as follows:—

Cases. Deaths.			Cases. Deaths.		
Orchitis	11	—	Hernia	41	1
Influenza	—	—	Schistosomiasis	6	—
Malaria	20	—	Hydrocele	59	—
Tuberculosis	6	1	Parturition	6	—
Cataract	3	—	Abscess	40	2
Filariasis	3	—	Elephantiasis	—	—
Bronchitis	9	—	Fractures	9	2
Broncho-pneumonia	3	1	Other injuries	34	1
Pneumonia	6	3	Dysentery	—	—
Pleurisy	3	—	Erysipelas	2	1
Blackwater fever	3	2	Ulcers	75	—
Senility	10	2	Gangrene	2	1
Ankylostomiasis	24	—			

Among the major operations performed were hæmorrhoids 2, hernia 33 (radical cure 31, strangulated 2), hydrocele, radical cure 76, elephantiasis 1, amputations 1, castration 7, cataract 1.

Four non-European officials, of whom none died were admitted into this hospital as compared with ten admissions in the previous year.

(C) OPERATIONS.

The following are the more important operations performed at all hospitals during 1933:—

1. <i>Abdominal</i> —		5. <i>Gynæcological</i> —	
Appendicectomy	20	Salpingectomy	4
Laparatomy	9	Ovariectomy	2
Gastro-jejunostomy	8	Ventrofixation	1
Colostomy	1	Hysterectomy	3
Splenectomy	3	Celpo-perinæorrhaphy	4
Papilloma rectum	1	Cæsarean section	2
2. <i>Rectal</i> —		Vesico-vaginal fistula	1
Hæmorrhoids	43	Dilatation and curetting	6
Fistula in ano	6	6. <i>Bones and Joints</i> —	
Perineal excision of rectum	2	Amputations	8
3. <i>Hernia</i> —		Sequestrotomy	18
Radical cure	198	Compound fractures	2
Strangulated	20	Tenotomy	1
4. <i>Genito-Urinary</i> —		8. <i>Eye</i> —	
Hydrocele, radical cure	305	Cataract	1
Elephantiasis	26	9. <i>Other Operations</i> —	
Orchidectomy	42	Adenectomies	28
External urethrotomy	5	Tumours and cysts	21
Varicocele	4	Tonsillectomy	18
Prostatectomy	2	Cellulitis	119
Cystotomy	2	Fistulæ	6
Hæmatocele	1	Mastoid	4
Funiculitis	2	Removal of foreign body under	
Transplantation of ureters	2	X-ray	3
Perinephric abscess	2	Skin graft	30
Papilloma bladder	1	Plastic	1
Nephrectomy	1	Craniectomy	1
Lithotomy	2		
		Total	942

(D) MEDICAL BOARDS AND EXAMINATIONS.

Medical Boards were held on 33 Government employees during this year and one European and four non-European officials were permanently invalided out of the service. Medical Examinations of candidates for Government employment numbered 61 and of officials prior to proceeding on leave 68.

(E) X-RAY EXAMINATIONS.

During the year 6 screen examinations were made and 268 photographs were taken.

(F) DENTAL SERVICE.

The existing arrangement with the Tanganyika Government was terminated as from August 14th, as it had been decided to advertise for a Dental Surgeon to undertake a contract with the Government to perform Government work at a fixed salary of £400 a year, private practice being allowed provided his official duties were not interfered with. Several applications were received and Mr. I. S. Rutter, L.D.S., R.C.S., of Mombasa was finally selected and will enter on his duties with the New Year.

(G) EYE CLINIC.

Dr. Watkins-Pitchford was in charge of the Eye Clinic throughout the year.

New cases amongst non-Europeans numbered 1,195 and repetitions 14,044. European new cases treated numbered 48. Major operations numbered 34. Prescriptions issued for spectacles numbered 122. Vision tests for Police recruits numbered 173.

Towards the end of the year the Eye Clinic was extended to include an adjoining room. This room has proved of great use as a dark room consultation, and refraction room, and has enabled the routine work of the Clinic to be carried out more efficiently.

During the year an anonymous donor generously gave five hundred rupees with which to purchase glasses for poor natives and others, whose vision has been restored by operation. A number of patients were able to benefit by this gift which is greatly appreciated by everyone concerned.

(H) TUBERCULOSIS CLINIC.

(1) The number of new patients attending the Clinic was 350 as follows:—

(a) Pulmonary tuberculosis	143
(b) Asthma	21
(c) Other pulmonary conditions	58
(d) Contacts of tuberculosis patients examined	88
(e) Number of school children examined	40

(2) Patients immunized against tuberculosis were 83 as follows:—

(a) Contacts of sputum positive cases immunized	49
(b) Contacts of sputum negative cases immunized	1
(c) Others immunized	1
(d) School children immunized	32

A solution of Tubercle Bacilli in benzoyl chloride with liquid paraffin added was used for this purpose. The small number of immunizations is due to the difficulty of getting the contacts to attend for the whole course of injections, usually six, and for examination.

The total number of re-attendances of all patients was 1985.

Asthma.—Encouraging results have been obtained in the treatment of Asthma with autogenous vaccines made from the patient's own sputum. Some patients have had no further attacks of asthma since they were treated with vaccines, whilst the attacks in those still under treatment have been considerably lessened in intensity, and the intervals between the attacks have been much lengthened in the course of undergoing the treatment. Anti-asthmatic drugs were withheld in the majority of cases during treatment, in order to ensure that the results were due to the vaccines and not to the drugs. The majority of the patients suffered worse from asthmatic attacks during the wet season, and first came up for treatment then, and in spite of the weather these patients rapidly improved after a few injections of

vaccines, and in many cases the physical signs completely disappeared from the lungs. The micro-organisms chiefly concerned are *Micrococcus Catarrhalis*, *Streptococci*, *B. Friedlander*, *Staphylococcus Aureus* and occasionally *Staphylococcus Citreus* and *Albus*.

2. *Walezo Tuberculosis Hospital.*

Number of in-patients remaining from 1932=	21 of which 8 died
Number of in-patients admitted during 1933=	101 of which 34 died
Number of in-patients remaining at the end of 1933	22
Number of in-patients discharged during 1933	58
Average residence of patients who died was :—	
(a) of those remaining from 1932	278.12 days
(b) of those admitted in 1933	31.89 days

Number of patients discharged with their sputum having become negative:—

(a) of those remaining from 1932	2
(b) of those admitted during 1933	10
Number of deaths	42
Average monthly number of in-patients	24.76

An explanation is necessary with regard to the high death rate amongst the cases sent to Walezo. It was originally intended that only cases which offered a hope of recovery should be sent there for treatment, but later it was considered advisable that as many cases as possible should be admitted irrespective of the stage of the disease they were in, so that they would be isolated and prevent the spread of infection amongst the general population. The average residence of patients admitted during 1933 who died—31.89 days—shows that the great majority of them were in an extremely advanced stage of the disease on admission, some being actually moribund. Several cases were in the hospital less than one week before they died. The figure of 278.12 days for the average residence of patients remaining from 1932 who died, includes one patient who was admitted in October, 1931, in whom the disease was arrested over a year before his death which was due to another disease and not to tuberculosis; he was kept in the hospital as he was a pauper and had no home to go to.

Building erected during 1933.—A large semi-permanent open air pavilion was erected for tuberculosis patients and a native house was repaired and converted into a temporary ward for the accommodation of Arabs suffering from phthisis. A semi-permanent building for females consisting of six separate wards for each patient is under the course of erection and is nearly completed. A similar building for Arabs will be erected during 1934.

Staff.—A sister who has had special training in the nursing of tuberculosis patients was appointed from the Catholic Mission, and has charge of the nursing of the patients.

3. *Notifications of Cases of Tuberculosis of all Forms.*—The total number of cases notified in the Protectorate from all sources during 1933 was 201 as follows:—

(a) Number of cases notified before death	188
(b) Number of cases notified after death	13

With regard to the latter number, these notifications were based on a history of the disease and viewing of the bodies. The same remarks applies to Sections 4 and 5.

4. *Distribution of Cases of Tuberculosis notified in 1933.*

	Pulmonary	Other forms
(1) Zanzibar Town	113	5
(2) Zanzibar Districts	49	—
(3) Pemba	33	1

5. *Disposal of Cases of Tuberculosis.*

1. Left the Protectorate in 1933	10
2. Lost trace of in 1933	34
3. Still under treatment at the Clinic at the end of 1933	116
4. Still under treatment at Walezo Hospital	92
5. Still under treatment by Private Practitioners	31
6. Deaths	93

These figures include cases notified before 1933. The same remark applies to Section 6 as regards deaths.

6. *Remarks on Pulmonary Tuberculosis in the various Communities.*—The highest incidence and death rate in pulmonary tuberculosis occurs amongst the Arabs, with the Shihiris and Ithnasheri Khojas next. The Zanzibar Swahilis and the Natives of the mainland tribes show about the same incidence of the disease, but the case mortality rate is considerably higher amongst the latter.

7. *Diagnosis of Pulmonary Tuberculosis.*—This has been based on the discovery of Tubercle bacilli in the sputa and in a few cases on X-ray findings. Only cases of active tuberculosis, as diagnosed by these methods are considered.

8. *Treatment.*—This has been carried out on general principles, e.g. rest, fresh air, and good food. The solution of the tubercle bacillus mentioned in Section A. starting with minute doses and judicious increase of the doses, has been used in many cases, chiefly in those who have become afebrile; autogenous secondary vaccines made from the patients own sputum have been combined with this treatment in some cases. Sanocrysin was used on three patients, but the treatment had to be discontinued owing to re-actions even with small doses. Artificial Pneumothorax was induced in two patients, but had to be discontinued on account of extension of the disease in the other lung. Very few cases are seen in which this form of treatment is indicated. Furthermore, it is almost certain that the patients would not attend subsequently in order that the pneumothorax could be kept up by re-fills for two or three years. Experience shows that the few cases which have only one lung affected and many of those with both lungs affected in moderate extent, rapidly improve when they are admitted to the hospital at Welezo, their temperatures settling down and remaining within normal limits after a few weeks, and in some cases even a few days of their admission, in spite of the fact that absolute rest is not carried out.

GENERAL REMARKS.

1. *Incidence.*—There have been fewer cases of Tuberculosis notified within the Protectorate in 1933, than in 1932. In 1932, 238 cases were notified, of which 12 were certified as having died from the diseases and notified after death, whereas in 1933, 201 were notified, of which 13 were certified and notified after death. The fall in the incidence of the disease must necessarily be apparent, since death returns in the districts are rendered by the shehas without medical opinion, but nevertheless, the figures are on the whole suggestive that there is a real fall in the incidence, as the 1932 figures were compiled under the same conditions as those of 1933.

2. *Difficulties Attending the Control of the Spread of Tuberculosis.*

(a) *Importation of Cases from Outside the Protectorate.*—Investigation of the histories of patients and the stage of the disease when they were first seen, prove conclusively that during the last three years many of them have entered the Protectorate from neighbouring territories, and also from India, Arabia and Italian Somaliland, suffering at the time from active pulmonary tuberculosis. Enquiries of a few of these patients reveal the fact that their intention in coming to Zanzibar, was to seek treatment. Greater inter-territorial co-operation is required in order to deal with this. In the case of Arabia, considerable difficulties arise, since these people come down in dhows with the north-east monsoon and they are unable to return to Arabia until the monsoon changes to the south-west in May.

(b) *Cases Lost Trace of.*—Most careful enquiries are made by the Administration as to the whereabouts of cases of Pulmonary Tuberculosis, and in spite of this many cannot be found. Possibly some of these have left the Protectorate unknown, while others change their names when they move to another district. Recently, one patient gave three of ten different names which he used. Another patient, a policeman, was invalided from the service, intending to go to British Somaliland; he, however, returned to the Protectorate from Tanganyika, under a different name.

(c) *Examination of Contacts of Tuberculosis Cases.*—Great difficulty is experienced in getting contacts to come up for examination.

(d) *Delay in Seeking Medical Advice.*—The majority of the patients are first seen in an advanced stage of the disease and have for months been spreading infection. The insidious onset and gradually progressing course of the disease, in many cases account for this delay in seeking advice. A few cases are seen, however, without definite physical signs but with tubercle bacilli, in their sputa.

(e) *Absence of Hospital for Treating Indian Patients.* At present the Indian population is unable to obtain suitable hospital accommodation and treatment for phthisis. Many Indians live under most unsatisfactory sanitary conditions as regards ventilation and overcrowding in the bazaar and it is impossible to treat people under these conditions.

(f) *Detention of Cases in Hospital at Welezo.*—An attempt is made to detain patients in the Hospital at Welezo until their sputa have become free from tubercle bacilli on several examinations. On account of the long time necessary for this to be effected, some patients request that they may be discharged or they run away before the sputum has become negative, since they feel perfectly well they consider that they are cured and there is no need for further treatment. Some of these cases have been re-admitted, months after they left the hospital, with the disease in a very advanced stage and some are actually moribund.

A. C. FREETH,
Tuberculosis Officer.

(1) INFECTIOUS DISEASES HOSPITAL, GULIONI, ZANZIBAR.

RETURN FOR 1933.

	Remaining from 1932.	Admitted during 1933.	Total.	Died.	Discharged.	Remaining end of 1933.	Remarks.
<i>Cases :</i>							
Chicken-pox	...	4	4	...	4	...	Local
Measles	...	15	15	...	15	...	Local
Leprosy	...	4*	4	...	3	1	{ *Transferred to Funzi 1 Transferred to Welezo 1 Absconded 1
Small-pox	...	3*	3	1	2	...	{ *Ex Dhow Sood 2 Ex S.S. Karanja 1 From South
Mumps	...	1	1	...	...	1	Local
Total	...	27	27	1	24	2	
<i>Contacts :</i>							
Measles	...	1	1	...	1	...	Local
Small-pox	...	2	2	...	2	...	{ Ex dhow 1 Ex S.S. Karanja 1
Total	...	3	3	...	3	...	
Grand Total	...	30	30	1	27	2	

(J) STATEMENT OF WORK CARRIED OUT FOR MEDICAL
DEPARTMENT DURING THE YEAR 1933.

	Amount Spent.	
PUBLIC WORKS RECURRENT.		
<i>Repairs and Maintenance of Building and Works.</i>		
Whitewashing and repairs to School Clinic, Vuga	50	00
Repairs to Gulioni Hospital	335	12
Demolishing W.C. and bath partitions at European Hospital	28	09
Removing boiler and patching wall in European Hospital	13	70
Repairs to Native Hospital	122	99
Repairs to boritis, Native Hospital	67	75
Repairs to Old Barracks—Medical Department	371	02
Repairing door of Mortuary, European Hospital	39	62
Repairs to Dispensary at Chaani	52	40
Repairs to Dispensary at Chwaka	121	38
Whitewashing Dispensary at Mangapwani and repairs	35	00
Various repairs to Native and European Hospital	73	05
Repairs at Prison Island	7,360	03
Repairs to Native Hospital	158	45
Making and fixing pantry sink, Native Hospital	15	60
Renewing fence at School Clinic	44	51
Renewing boritis Native Hospital	49	61
Repairs at Walezo	1,102	55
Replacing boritis Native Hospital	79	99
Disconnecting water supply in various Cowsheds at Mji Mpia	17	57
Repairs to Cowshed at Mji Mpia	43	33
Repairs to Dispensary at Mwera	50	00
Re-rendering floor, Native Hospital	83	21
Repairs to Mji Mpia Cowsheds	178	14
Whitewashing and repairs to Maternity Home and Dispensary at Mwembeladu	173	54
Repairs to ceiling at Central Dispensary	44	75
Repairs to Native and European Hospital	65	65
Repairs to plaster work, Native Hospital	29	57
Taking out old windows and fixing new, Native Hospital	122	86
Fixing new chimney and repairs to hood and stove at Native Hospital	68	18
Repairs to fencing Health Office	96	07
Patching and colas painting paths at Native Hospital	83	26
Repairs, etc., Eye Clinic	116	33
Repairs to door at Gulioni Abattoir	65	54
Repairs to spring doors at Wete Hospital	17	30
Whitewash in and outside Chake Chake Hospital	99	42
Repairs to verandah roof of Hospital Office, Wete	142	45
Repairs to sink for Funzi Dispensary	74	91
Re-aligning Hospital roof gutterings, Chake Chake	28	35
Repairs to Hospital, Mkoani	88	33
Repairs to wall of Chake Chake Hospital	60	37
Repairs to female ward, Chake Chake Hospital	67	63
Oregon pine for Hospital Ceiling, Wete	62	82
Colas floor to Kinaziini Dispensary, Wete	26	13
Whitewash and paint to Wete Hospital	296	67
Repairs to Hospital bathroom, Chake Chake	39	36
<i>Maintenance and Improvement of Drains and Cesspools.</i>		
Constructing cesspool for draining waste water Health Office	139	42
Making three new boring pits at Walezo	49	56
PUBLIC WORKS EXTRAORDINARY.		
<i>Minor Works.</i>		
Extended partition of room at Gulioni Hospital	165	97
Proposed new work at Old Barracks for Medical Department	485	99
To put a new window in the room next to Central Dispensary	87	05
Wire-netting to be fixed at School Clinic	39	50
Ceiling to the roof of the P.W.D. Stores at Mkoani to be used as Health Office	244	89
Total Expenditure	13,574	98

VII. PRISONS AND ASYLUMS.

(A) PRISONS.

The following is a summary of the more important returns:—

	Zanzibar and Chwaka	Mkokotoni	Chake- Chake	Wete	Mkoani	Total
No. of prisoners remaining end of 1932	125	12	11	15	16	179
No. admitted during 1933	690	60	180	265	102	1,297
No. discharged during 1933	675	62	180	251	100	1,268
No. released on medical grounds during 1933	1	...	...	...	1	2
No. died during 1933	5	...	...	...	1	6
No. remaining in prison end of 1933	140	10	11	29	15	205
Average daily number in prison during 1933	141.50	10.26	10.85	16.90	13.92	192.43
No. of illnesses treated during 1933	880	69	133	142	156	1,380
No. admitted to Hospital during 1933	102	...	4	19	15	140

The causes of death and release on medical grounds were as follows:—

Death:—Hernia (post operative shock) 1, chronic pleurisy 1, dysentery 1, myocarditis 1, ankylostomiasis 1.

Release on Medical Grounds:—Ankylostomiasis 1.

The more common or important illnesses occurring among the prisoners were malaria 103, influenza 14, dysentery 16, conjunctivitis 26, bronchitis 73, diarrhoea 54, ankylostomiasis 36, constipation 76, ulcers 23, cellulitis 18, boils 14, myalgia 54, arthritis 16, injuries 102, dental caries 24.

There has been a continuous fall in the number of cases of dysentery in the jail during the last three years as follows:—In 1931 there were 56 cases, in 1932 there were 26. and in 1933 16 cases.

(B) LUNATIC ASYLUM.

Summary for the year 1933:—

	Males.	Females.	Total.
Patients remaining 31st December, 1932	26	12	38
Patients admitted during 1933	15	3	18
Patients discharged cured	5	—	5
Patients discharged to care of relatives	2	—	2
Patients died	13	1	13
Patients remaining at the end of 1933	22	14	36

Variety alienation:—

	Remaining at end of 1932	Admitted	Discharged	Died	Remaining at the end of 1933
Melancholia	14	3	3	—	14
Mania	7	7	2	—	12
General Paralysis of Insane	4	3	1	4	2
Epileptic	1	—	—	1	—
Senile Dementia	10	5	1	7	7
Dementia Precox	1	—	—	1	—
Paranoia	1	—	—	—	1
	<u>38</u>	<u>18</u>	<u>7</u>	<u>13</u>	<u>36</u>

Causes of deaths:—

	Males.	Females.
General Debility	5	1
Lobar Pneumonia	1	—
Septic Synovitis	1	—
Epilepsy	1	—
Dysentery	1	—
Ankylostomiasis	1	—
Cerebral Hæmorrhage	1	—
Heart Failure	1	—

(C) POOR ASYLUM.

The arrangement with the Roman Catholic Mission expired in the month of February.

A new agreement was drawn up and the Mission continued to give the same excellent service as before. The devotion of the Sister in charge and the care and skill with which she and the other Sisters look after the inmates is beyond praise.

An additional Sister was appointed to look after the 'Tuberculosis Wards'. Prior to her appointment she had undergone six months' training in Tuberculosis Work. The Government contributed half the cost of her training and half the cost of her passage amounting to £75. Her services to the tuberculosis patients have been invaluable.

Details of new buildings erected at Welezo during the year will be found in Section (H) Tuberculosis Clinic page 49.

The following is the return of inmates for the year:—

	Males.	Females.	Total.
Patients remaining on 31st December, 1932	99	46	145
Patients admitted during 1933	402	101	503
Patients died during 1933	119	55	174
Patients discharged during 1933	264	52	316
Patients remaining at the end of 1933	118	40	158

The principal causes of death were returned as senility and debility 102, tuberculosis 41, paralysis 5, nephritis 3, ankylostomiasis 4.

As in previous years a large number of natives living in the neighbourhood of the Poor House attended the dispensary as out-patients, the number of new cases numbering 5,926 this year and the re-attendances 14,071.

Almost daily visits were paid by a Medical Officer or Sub-Assistant Surgeon.

(D) LEPER SETTLEMENT.

(See Appendix II page 76.)

VIII. METEOROLOGY.

A summary of the more important meteorological returns for the past year and a comparison with the means for previous is contained in Table IV on page 66. From these it will be seen that in Zanzibar Town the rainfall was 11 inches below the average taken over a period of 39 years and at Banani in Pemba 23 inches below an average taken over 32 years. Mosquito-Borne Diseases, malaria in particular, showed in consequence a definite diminution in incidence, *vide* page 9.

The greatest rainfall occurred in Zanzibar Town during the months of April 7.64 inches, November 10.19 inches, December 6.49 inches, and at Banani in Pemba during January 12.38 inches, and May 7.94 inches. The greatest rainfall on any one day was 2.70 inches on the 27th of November in Zanzibar and 4.04 inches on the 21st of March in Pemba. The absolute maximum temperature was recorded as 95.9° in Zanzibar in April and as 92.5° in Pemba in April; the absolute minimum as 68.8° in August in Zanzibar and as 64.0° in August in Pemba. In Zanzibar Town the means for the year were maxima temperatures 84.6° minima temperatures 77.2° barometric pressures 29.909°, dew points 20.9° and relative humidities 83 per cent.

B. SPEARMAN,

Acting Director of Medical and Sanitary Services.

IX. SCIENTIFIC.

PATHOLOGICAL LABORATORY REPORT.

The Pathologist was absent on leave from February till September, the work being in charge of the Senior Laboratory Assistant.

In November the Pathologist attended the Medical Research Conference at Entebbe, which was of great interest and real value through the interchange of views with colleagues from the other East African Laboratories, and correlation of methods and lines of investigation.

The preparation of Besredka's "Anti-Virus" was continued, 4,000 cubic centimetres being prepared and supplied for use in the Native Hospital, Zanzibar. A detailed case report has not been received, but it is understood that results of treatment with this preparation were very satisfactory.

Medico-legal examinations have been greatly reduced during the year, occasion for such examinations apparently not having arisen.

EXAMINATIONS OF PUBLIC HEALTH INTEREST.

Water Supplies.—Routine examinations of the water supplies of Zanzibar Town have been made regularly, and in addition occasional examinations of water from Chake Chake, Pemba.

Enteric Group.—Comparison with last year shows an increase of blood specimens submitted for Agglutination Test, with a corresponding greater number of positives. Of blood cultures for *B. Typhosus*, 2 were positive; and of 17 of stools cultures, *B. Typhosus* was isolated from 3.

Dysentery.—A case of amoebic Dysentery occurred in an individual visiting Zanzibar from Pemba, enquiry leaving little doubt that the infection was acquired at Mkoani, Pemba.

The number of cases of Bacillary Dysentery diagnosed in the Laboratory is almost exactly half the previous year's total, being 21 cases compared with 43. *B. dysenteriae* Flexner was the predominant type, though it is of interest to note that *B. dysenteriae* Sonne, first identified last year, continues to appear as a cause of dysentery.

Tuberculosis.—The majority of sputa were submitted by the Tuberculosis Clinic, in many cases cultures being made for preparation of vaccines from the secondary organisms. These vaccines are stated by the Tuberculosis Officer to be of real value in treatment.

The type of Tuberculin known as "H.T.S." was prepared in the Laboratory, 1,630 ampoules being supplied for the use of the Tuberculosis Officer.

H. G. WILTSHIRE,
Pathologist.

ZANZIBAR PATHOLOGICAL LABORATORY RETURN FOR THE YEAR 1933.

<i>Blood.</i>	Positive.	Negative.	Total.
Leucocyte count			34
Leucocyte count and differential count			27
Differential count only			83
Red cell count, Hæmoglobin and Colour Index			25
Red cell count, with differential count			5
Complete blood count			26
Blood cultures	6	17	23
Sugar estimation			341
Sugar tolerance test			3
Urea estimation			24
Van den Bergh reaction			1
Wassermann reaction	202	237	439
Blood sedimentation			26
Agglutination reaction for :—			
B. Typhosus	14	37	51
Salmonella group			
Micro-filaria	47	35	82
Malaria Benign Tertian	909		
,, Quartan	26		
,, Sub-tertian	166	2,600	4,423
,, mixed B.T. and M.T.	6		
,, type undefined	716		
			5,613
<i>Sputum.</i>			
B. Tuberculosis	237	538	775
Spirochæta bronchialis	—	1	1
			776
<i>Fæces.</i>			
Microscopic examination only :—			
Entamoeba histolytica	2		
,, Coli	3		
,, Unidentified	3	22	32
Endolimax nana	1		
Giardia intestinalis	1		
Ova of Ankylostoma	572		
Ova of Ascaris	59		
Ova of Schistosoma mansoni	2		
Ova of Schistosoma hæmatobium	1		1,254
Ova of Tænia Saginata	4		
Ova of Trichuris	255		
Strongyloides larvæ	137		
Microscopic examination and culture :—			
B. dysenteriae Shiga	1		
B. dysenteriae Flexner	16	27	48
B. dysenteriae Sonne	4		
Culture for B. Typhosus	3	14	17
Ankylostome ova count			13
Occult blood	2	—	2
			1,366
<i>Urine.</i>			
General examinations			142
Presence of sugar only			316
Examination of deposit only			138
Examination for ova of Schistosoma	48	37	85
Cultural examination			8
Urea estimation			26
			715

<i>Miscellaneous Examinations.</i>	Positive	Negative	Total.
Pus for Gonococci			161
Pus for other organisms			15
Examination of Cervical swabs			4
Examination of rectal growth for microfilaria	1	—	1
Smear for Sp. pallida			24
Smear for Leishmania	—	1	1
Smear from growth for Schistosoma	.		1
Cerebro-Spinal fluid	.		7
Pleural fluid			2
Gland puncture			3
Fractional Test meal			4
Medico-legal examination of smears			3
Medico-legal examination of clothing, etc.			3
Skin scraping for fungus			2
Culture of fluid from skin vesicle			1
Culture of sputum for B. pertussis			1
Culture of throat swab for Diphteria			2
Preparation of vaccines			96
Nasal smears for B. Lepræ			47
Skin smears for B. Lepræ			3
Spleen smears from rats for B. Pestis	—	886	886
			1,267

Histological Examinations of Tissues.

Normal gland	1
Tuberculous gland	2
Nasal polyp	1
Fibroma	3
Fibrosarcoma	2
Inflammatory tissue	1
Cirrhosis of liver	2
Erosion of cervix	1
Squamous—celled carcinoma	3
Adeno-carcinoma	1
	17

2. CHAKE CHAKE LABORATORY RETURN.

Blood Examinations Total. 916	Fæces Total. 381	Sputum Total. 54	Urine Total. 429	Skin and Nasal Examinations for M. lepræ, etc. Total - 34
<i>Malaria</i> B. T. S. T. Mixed Undefined Negative Micro-filaria	134 13 20 132 82 Ankylostoma Ascariis Trichuris Negative Mixed Helminths	Positive T.B. Negative " " Gen. Bact.	16 28 10 Sugar Negative Bile	32 95 7 285 10 Positive M. lepræ Negative " Other smear examinations
198 18 12 33 654 1				5 1 29

3. WETE LABORATORY RETURN.

Blood Examinations Total - 157	Urine Total - 77	Nasal Examinations for M. lepræ Total - 44	Sputum for T. B. Total - 28	Fæces Total - 192
<i>Malaria</i> B. T. S. T. Undefined Microfilaria Negative	19 12 46 Sugar estimations Bilharzia Routine examinations	Positive Negative	11 17 Positive Negative	58 1 1 Other examinations
15 9 14 1 118				132

TABLE I.

A. EUROPEAN STAFF.

Name.	Rank and Appointment.	Where Stationed on 31st December, 1933.
W. L. Webb	Director of Medical and Sanitary Services	On leave
B. Spearman	Deputy Director of Sanitary Services	Zanzibar
S. M. Vassallo	Resident Surgical Officer	"
H. G. Wiltshire	Pathologist	On leave
J. M. Semple	Medical Officer	Zanzibar
W. A. Young	" "	On leave
A. C. Freeth	" "	Zanzibar
H. O. Watkins-Pitchford	" "	"
W. H. Smith	" "	On leave
D. D. McCarthy	" "	Chake Chake
R. Nicklin	" "	Mkoani
Miss A. E. Davis	Matron	Zanzibar
" M. A. McKie	Nursing Sister	Chake Chake
" M. M. Richards	" "	Zanzibar
" M. K. O'Shea	" "	On leave
" M. G. Miller	" "	Wete
" M. Cottier	" "	Zanzibar
" A. M. Brewster	" "	"
" M. E. Cleaver	" "	"
" M. V. Jones	" "	"
E. H. Lavers	Sanitary Inspector	"

B. PRINCIPAL MEMBERS OF SUBORDINATE STAFF.

Name.	Rank and Appointment.	Where Stationed on 31st December, 1933.
K. V. Joshi	Assistant Surgeon	Zanzibar
C. D. Rana	Sub-Assistant Surgeon	On leave
M. L. Mehta	" "	Zanzibar
M. V. Vaidya	" "	Chake Chake
R. C. Sood	" "	Mkoani
Dinanath Koura	" "	Wete
M. Y. Khan	" "	Zanzibar
S. B. Kulkarni	" "	"
A. J. Rawal	Dispenser	On leave
M. da Silva	"	Chake Chake
J. J. Antao	"	Zanzibar
P. da Cunha	"	"
P. S. Patel	"	"
H. I. Bhutt	"	"
A. A. Madhani	Sanitary Inspector	"
A. G. Kark	Senior Laboratory Assistant	"
D. Falleiro	Chief Clerk	"
F. X. F. Lobo	Cashier	"
S. B. P. Fernandes	Store-Keeper	"

TABLE II.

FINANCIAL.

(A) Expenditure:—

Personal Emoluments :—	£	
Salaries and Allowances		32,028
Other Charges :—	£	
Passages	1,626	
Transport Allowances	239	
Travelling Allowances	61	
Transport Expenses	704	
Fuel for Motor Vehicles	80	
Repairs to Transport Vehicles	177	
Light and Power	492	
Fuel	72	
Staff Clothing and Uniforms	100	
Books and Periodicals	32	
General Stores	1,392	
Drugs and Surgical Requisites	2,469	
Purchase of Opium	72	
Subsistence of Hospital Patients	1,746	
Maintenance of Lepers	674	
Burial of Destitute	14	
Upkeep of District Dispensaries	146	
Sanitation Labour	6,090	
Upkeep of Government Dairies	80	
Incidental Expenses	22	
	—	16,288
Special Expenditure :—		
Anti-Endemic Measures	80	
Hospital Furniture and Equipment	131	
Tuberculosis Investigation and Treatment	734	
Sewing Machine	6	
Bicycle	7	
Equipment of Dental Surgery	6	
Electric Water Heater	14	
	—	978
Total Expenditure		49,291

(B) Revenue:—

Hospital Fees, Sale of Drugs, etc.	890
Contribution from other dependencies towards Quarantine Services	2,637
Total Revenue	3,527

TABLE III.

(1) Summary of returns of Population for the year 1933.

	Births.	Deaths.	Immigrants.	Emigrants.	Population end of 1933
Europeans	3	2	15,691	14,525	285
Arabs and Africans	4,000	3,425			220,103
Indians and Other Races	573	248			16,986
	4,576	3,675	15,691	14,525	237,374

(2) Births registered in the Island of Zanzibar, 1925-1933.

	1925.	1926	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Town Area	424	437	471	526	591	603	610	632	652
Northern District	1,073	846	1,102	916	960	820	1,656	910	1,105
Southern District	849	915	1,033	1,088	975	742	993	802	849
	2,346	2,198	2,606	2,530	2,526	2,165	3,259	2,344	2,606

(3) Deaths registered in the Island of Zanzibar, 1925-1933.

	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Town Area	1,379	1,560	1,097	1,093	920	1,117	1,179	1,107	966
Northern District	854	799	658	788	707	680	844	947	571
Southern District	1,146	1,473	1,170	1,240	1,083	1,191	1,369	1,318	1,042
	<u>3,379</u>	<u>3,832</u>	<u>2,925</u>	<u>3,121</u>	<u>2,710</u>	<u>2,988</u>	<u>3,392</u>	<u>3,372</u>	<u>2,579</u>
	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.

(4) Comparative Statement of Births and Deaths registered in the Island of Zanzibar, 1925-1933.

Town Area—	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Births	424	437	471	526	591	603	610	632	652
Deaths	1,379	1,560	1,097	1,093	920	1,117	1,179	1,107	966
District—									
Births	1,922	1,761	2,135	2,004	1,935	1,562	2,649	1,712	1,954
Deaths	2,000	2,272	1,828	2,028	1,790	1,871	2,213	2,265	1,613
Total—									
Births	2,346	2,198	2,606	2,530	2,526	2,165	3,259	2,344	2,606
Deaths	3,379	3,832	2,925	3,121	2,710	2,988	3,392	3,372	2,579

(5) Comparative Statement of Births and Deaths registered in the Island of Pemba, 1925-1933.

	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Chake Chake—									
Births	860	689	1,047	693	648	690	592	942	708
Deaths	446	377	422	437	420	444	418	383	365
Wete—									
Births	419	517	699	628	459	381	474	575	651
Deaths	441	491	530	454	462	399	526	481	399
Mkoani—									
Births	749	426	406	385	571	405	340	648	611
Deaths	307	317	251	290	301	320	288	394	332
Total—									
Births	2,028	1,632	2,152	1,706	1,678	1,476	1,406	2,165	1,970
Deaths	1,194	1,185	1,203	1,181	1,183	1,163	1,232	1,258	1,096

(6) Comparative Statement of Births and Deaths registered in the Zanzibar Protectorate, 1925-1933.

	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Zanzibar Island—									
Births	3,346	2,198	2,606	2,530	2,526	2,165	3,259	2,344	2,606
Deaths	3,379	3,832	2,925	3,121	2,710	2,988	3,392	3,372	2,579
Pemba Island :									
Births	2,028	1,632	2,152	1,706	1,678	1,476	1,406	2,165	1,970
Deaths	1,194	1,185	1,203	1,181	1,183	1,163	1,232	1,258	1,096
Total—									
Births	4,374	3,830	4,758	4,236	4,204	3,641	4,665	4,509	4,576
Deaths	4,573	5,017	4,128	4,302	3,893	4,151	4,624	4,630	3,675
Excess of Deaths over Births	199	1,187	—	66	—	510	—	121	—
Excess of Births over Deaths	—	—	630	—	311	—	41	—	901

(7) Births in Zanzibar Township during the year 1933:—

(a) Total number—652.

Births, live	652
Births, still-born	43
Total	<u>695</u>

(b) Sex of live births—

Males	345
Females	307
Total	652

(c) Nationality of live births—

Europeans	3
Arabs	82
Asiatics (excluding Arabs)	437
Africans	130
Total	652

(8) Deaths in Zanzibar Township during the year 1933:—

(a) Total number—966.

(b) Sex—

Males	502
Females	464
Total	966

(c) Nationality—

Europeans	2
Arabs	126
Asiatics (excluding Arabs)	220
Africans	618
Total	966

(9) Return of Causes of Deaths in Zanzibar Township during 1933:—

I. *Epidemic, Endemic and Infectious Disease :—*

Typhoid Fever	3
Malaria	104
Blackwater	2
Small-pox	1
Influenza	1
Dysentery	6
Tetanus	2
Tuberculosis, Pulmonary	49
Syphilis	3
Gonorrhœa	3
Septicæmia	1
Pyæmia	1
Filariasis	7
Pertussis	7

II. *General Diseases not mentioned above :—*

Cancer	8
Tumours (non-malignant)	1
Arthritis, chronic	5
Diabetes	6
Anæmia	2
Marasmus	6
Toxæmia	4

III. *Affections of the Nervous System and Organs of the Senses :—*

Paraplegia	7
Hemiplegia and Other Paralysis	19
Apoplexy	12
Mental Alienation	7
Epilepsy	3
Infantile Convulsions	33
Antrum of Highmore	1

IV. *Affections of the Circulatory System :—*

Valvular Disease of Heart	9
Myocarditis	21
Angina Pectoris	1
Diseases of Arteries	5
Lymphangitis	2
Ankylostomiasis	159
Appendicitis	2
Hernia	10
Intestinal Obstruction	2
Cirrhosis of the Liver	5
Jaundice	1
Peritonitis	3
Perineal Fistula	2
Splenitis	1
Weil's Disease	1
Avitaminosis	1
Suppression of Urine	1

V. *Affections of the Respiratory System :—*

Acute Bronchitis	5
Chronic Bronchitis	20
Broncho-pneumonia	25
Pneumonia	28
Asthma	8
Pleurisy	1
Pulmonary Embolism	1
Atelectasis	1

VI. *Diseases of the Digestive System :—*

Hæmatemesis	2
Dyspepsia	1
Ulcer Stomach	1
Diarrhœa and Enteritis— under two years	3
Diarrhœa and Enteritis— two years and over	11

VII. <i>Diseases of the Genito-Urinary System (non-venereal) :—</i>		X. <i>Diseases of Bones and Joints :—</i>	
Acute Nephritis	16	Arthritis	2
Chronic Nephritis	7	Synovitis	1
Cystitis	1	XI. <i>Malformations :—</i>	
Uræmia	1	Nil.	
Prostatitis	1	XII. <i>Diseases of Infancy :—</i>	
Hydrocele	2	Congenital Debility	1
Vesical Calculus	1	Premature Birth	8
Hypertrophy Prostate	3	Asphyxia Neonatorum	1
Orchitis	1	XIII. <i>Affections of Old Age :—</i>	
Fibröid	1	Senility	212
Albuminuria	2	XIV. <i>Affections Produced by External Causes :—</i>	
VIII. <i>Puerperal State :—</i>		Burns	5
Normal Labour	1	Drowning (Accidental)	4
Obstructed Labour	2	Fractures	2
Septicæmia	2	External Injuries	8
Eclampsia	1	XV. <i>Ill-defined Diseases :—</i>	
IX. <i>Affections of the Skin and Cellular Tissues :—</i>		Hyperpyrexia	1
Gangrene	3	General Debility	30
Abscess	1	Pyrexia (uncertain origin)	4
Cellulitis	3		966
Elephantiasis	1		

TABLE IV.

METEOROLOGICAL RETURN.

The following is a brief summary of the more important meteorological returns available for the year, compared with the means for the years 1892-1932 in the case of Zanzibar and the means for years 1899-1932 in the case of Pemba.

	Zanzibar (Town)		Pemba (Banani)	
	1892-1932.	1933.	1899-1932.	1933.
Mean of daily maxima	84.4°F.	84.6°F.	86.3°F.	86.0°F.
Mean of daily minima	76.6°F.	77.2°F.	76.1°F.	72.2°F.
Mean of daily range	7.8°F.	7.4°F.	10.2°F.	13.8°F.
Mean	80.5°F.	80.8°F.	81.2°F.	79.0°F.
Rainfall	58.59 inches.	47.54 inches.	73.25 inches.	50.58 inches.
Rainy days	103	100	162	128

TABLES V. AND VI.

Return of Diseases and Deaths (In-Patients) and of Diseases (Out Patients) for the year 1933.

Diseases.			In-patients.				Out-patients.			
			Remaining in Hospital at the end of 1932	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1933	Males.	Females.	Total.
				Admitted.	Deaths.					
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.										
1 Enteric Group—										
(a) Typhoid Fever	..	..	4	..	4	..	3	2	5	
(b) Paratyphoid A	..	..	1	..	1	..	1	..	1	
(c) Paratyphoid B	..	..	..	..	..	..	..	..	..	
(d) Type not defined	..	..	..	..	..	..	..	..	..	
2 Typhus										
3 Relapsing Fever										
4 Undulant Fever										
5 Malaria—										
(a) Tertian	..	..	102	1	102	4	971	327	1,298	
(b) Quartan	..	..	4	..	4	..	58	9	67	
(c) Aestivo-autumnal	..	2	25	2	27	..	137	45	182	
(d) Cachexia	..	..	30	..	30	1	478	134	612	
(e) Blackwater	..	..	5	3	5	..	6	..	6	
(f) Type not defined	..	3	72	..	75	..	3,508	1,860	5,368	
6 Small-pox	..	..	3	1	3	..	2	1	3	
7 Measles	..	..	..	..	..	..	40	24	64	
8 Scarlet Fever	..	..	..	..	..	..	..	..	..	
9 Whooping Cough	..	..	..	..	..	..	85	116	201	
10 Diphtheria	..	..	..	..	..	..	..	..	..	
11 Influenza	..	2	39	..	41	..	756	228	984	
12 Miliary Fever	..	..	..	..	..	..	1	..	1	
13 Mumps	..	..	2	..	2	..	58	17	75	
14 Cholera	..	..	..	..	..	..	..	..	..	
15 Epidemic diarrhoea	..	..	..	..	..	..	..	..	..	
16 Dysentery—										
(a) Amœbic	..	..	..	..	..	..	3	..	3	
(b) Bacillary	..	1	29	4	30	3	29	1	30	
(c) Undefined or due to other causes	..	..	4	1	4	..	35	5	40	
17 Plague										
18 Yellow Fever										
19 Spirochaetosis ictero-hæmorrhagica										
(a)	..	..	1	1	1	..	1	..	1	
20 Leprosy	..	37	23	2	60	34	36	11	47	
21 Erysipelas	..	..	2	1	2	..	4	..	4	
22 Acute Poliomyelitis	..	..	1	..	1	..	..	1	1	
23 Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	
24 Epidemic Cerebro-spinal Fever										
25 Other Epidemic Diseases—										
(a) Rubella (German Measles)	..	..	..	..	..	..	10	9	19	
(b) Varicella (Chicken-pox).	..	..	2	..	2	..	20	5	25	
(c) Kala-azar	..	..	..	..	..	..	..	..	..	
(d) Phlebotomus Fever	..	..	..	..	..	..	..	..	..	
(e) Dengue	..	..	1	..	1	..	1	1	2	
(f) Epidemic Dropsy	..	..	..	..	..	..	..	..	..	
(g) Yaws	..	1	22	..	23	..	4,206	1,729	5,935	
(h) Trypanosomiasis	..	..	..	..	..	..	1	..	1	
Carried forward ..			46	372	16	418	42	10,450	4,525	14,975

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Yearly Total		Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
		Admitted	Deaths.					
Brought forward ..	46	372	16	418	42	10,450	4,525	14,975
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES—(Contd).								
26 Glanders	..	..	..	..	..	..	..	..
27 Anthrax	..	..	..	..	..	..	..	..
28 Rabies	..	..	..	..	..	..	..	..
29 Tetanus	..	3	1	3	..	3	..	3
30 Mycosis	..	..	..	..	..	1	1	2
31 Tuberculosis, Pulmonary and Laryngeal	24	164	52	188	22	195	29	224
32 Tuberculosis of the Meninges or Central Nervous System	..	..	..	..	..	..	..	..
33 Tuberculosis of the Intestines or Peritoneum	..	..	..	..	..	..	..	..
34 Tuberculosis of the Vertebral Column	..	2	..	2	1	1	3	4
35 Tuberculosis of Bones and Joints	..	4	..	4	1	4	1	5
36 Tuberculosis of other Organs—								
(a) Skin or Subcutaneous Tissue (Lupus)	..	3	..	3	..	3	1	4
(b) Lymphatic system	..	1	..	1	..	6	1	7
(c) Genito-urinary System.. ..	..	..	..	..	..	..	..	..
(d) Other organs	..	..	..	..	..	..	..	..
37 Tuberculosis disseminated—								
(a) Acute	..	..	..	..	..	..	..	..
(b) Chronic	..	..	..	..	..	..	..	..
38 Syphilis—								
(a) Primary	..	4	..	4	..	146	15	161
(b) Secondary	1	11	..	12	2	90	32	122
(c) Tertiary	..	40	2	40	2	109	41	150
(d) Hereditary	..	..	..	..	..	2	2	4
(e) Period not indicated	..	..	..	..	..	5	4	9
39 Soft Chancre	1	6	..	7	..	66	1	67
40 A.—Gonorrhœa and its complications	1	43	..	44	..	1,454	118	1,572
B.—Gonorrhœal Ophthalmia	..	3	..	3	..	3	2	5
C.—Gonorrhœal Arthritis	1	19	..	20	..	77	6	83
D.—Granuloma Venereum	..	1	..	1	..	2	..	2
41 Septicæmia	1	19	5	20	..	26	2	28
42 Other Infectious Diseases—								
Filariasis	..	55	1	55	2	447	26	473
II. GENERAL DISEASES NOT MENTIONED ABOVE.								
43 Cancer or other malignant Tumours of the Buccal Cavity	..	2	1	2	..	1	1	2
44 Cancer or other malignant Tumours of the Stomach or Liver	..	4	2	4	..	4	1	5
45 Cancer or other malignant Tumours of the Peritoneum, Intestines and Rectum	..	..	..	..	..	..	..	..
Carried forward ..	75	756	80	831	72	13,095	4,812	17,907

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients		
	Remaining in Hospital at the end of 1932.	Yearly Total		Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
		Admitted.	Deaths.					
Brought forward ..	75	756	80	831	72	13,095	4,812	17,907
II. GENERAL DISEASES NOT MENTIONED ABOVE—(Continued).								
43 Cancer or other malignant Tumours of the Female Genital Organs ..	..	1	..	1	1	..	2	2
47 Cancer or other malignant Tumours of the Breast ..	..	..	..	..	..	..	..	..
48 Cancer or other malignant Tumours of the Skin ..	..	2	..	2	..	1	1	2
49 Cancer or other malignant Tumours of organs not specified ..	..	6	1	6	..	2	4	6
50 Tumours non-Malignant ..	2	31	..	33	..	80	24	104
51 Acute Rheumatism ..	..	..	..	..	..	56	17	73
52 Chronic Rheumatism ..	1	9	..	10	..	753	280	1,033
53 Scurvy (including Barlow's Disease) ..	..	..	..	..	..	..	..	..
54 Pellagra ..	..	4	..	4	..	12	..	12
55 Beri-Beri ..	..	7	..	7	..	25	21	46
56 Rickets ..	..	1	..	1	..	4	2	6
57 Diabetes (not including Insipidus) ..	..	9	..	9	..	19	7	26
58 Anæmia ..	..	..	..	..	..	493	490	983
59 Diseases of the Pituitary Body ..	..	..	..	..	..	..	..	..
60 Diseases of the Thyroid Gland—	..	..	..	..	..	..	..	..
(a) Exophthalmic Goitre ..	..	..	..	..	..	..	..	..
(b) Other Diseases of the Thyroid Gland, Myxœdema ..	0	2	0	2	..	4	2	6
61 Diseases of the Para-Thyroid Glands ..	..	..	..	..	..	..	..	..
62 Diseases of the Thymus ..	..	..	..	..	..	..	..	..
63 Diseases of the Supra Renal Glands ..	..	..	..	..	..	..	..	..
64 Diseases of the Spleen ..	..	5	1	5	1	238	144	382
65 Leukæmia ..	..	1	..	1	..	1	2	3
66 Alcoholism ..	..	1	..	1	..	1	..	1
67 Chronic poisoning by mineral Substances (lead, mercury, etc.) ..	..	..	..	..	..	..	..	..
68 Chronic poisoning by organic substances (Morphia, Cocaine, etc.) ..	..	..	..	..	..	..	..	..
69 Other General Diseases ..	..	2	..	2	2	17	6	23
III. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES.								
70 Encephalitis (not including Encephalitis Lethargica)..	..	..	..	..	..	..	..	..
Carried forward ..	78	837	82	915	76	14,801	5,814	20,615

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Yearly Total		Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
		Admitted.	Deaths.					
Brought forward ..	78	837	82	915	76	14,801	5,814	20,615
III. AFFECTION OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES—(Continued).								
71 Meningitis (not including Tuberculous Meningitis or Cerebro-Spinal Meningitis) ..	..	2	1	2	..	2	1	3
72 Locomotor Ataxia ..	..	5	1	5	..	11	4	15
73 Other Diseases of the Spinal Cord ..	..	8	..	8	1	8	10	18
74 Apoplexy—								
(a) Hæmorrhage ..	..	9	7	9	..	8	1	9
(b) Embolism ..	..	..	..	..	..	1	..	1
(c) Thrombosis ..	..	3	..	3	1	2	1	3
75 Paralysis—								
(a) Hemiplegia ..	1	4	1	5	..	20	12	32
(b) Other Paralysis ..	2	15	5	17	5	38	17	55
76 General Paralysis of the Insane ..	..	1	1	1	..	1	..	1
77 Other forms of Mental Alienation ..	..	6	..	6	..	7	6	13
78 Epilepsy ..	2	4	1	5	..	15	2	17
79 Eclampsia, Convulsions (non-puerperal) 5 years or over. ..	..	..	..	..	..	2	..	2
80 Infantile Convulsions ..	..	..	..	..	..	..	1	1
81 Chorea ..	..	..	..	..	..	1	..	1
82 A.—Hysteria ..	..	6	..	6	..	..	10	10
B.—Neuritis ..	..	4	..	4	1	39	9	48
C.—Neurasthenia ..	..	1	..	1	..	8	1	9
83 Cerebral Softening ..	..	1	..	1	..	..	1	1
84 Other affections of the Nervous System ..	..	15	1	15	..	2,081	665	2,746
85 Affections of the Organs of Vision ..	7	83	..	90	7	3,146	1,291	4,437
86 Affections of the Ear or Mastoid Sinus ..	..	15	..	15	..	1,618	646	2,264
IV. AFFECTIONS OF THE CIRCULATORY SYSTEM.								
87 Pericarditis ..	..	1	..	1	..	1	..	1
88 Acute Endocarditis or Myocarditis ..	..	11	1	11	1	12	..	12
89 Angina Pectoris ..	..	..	..	..	..	1	..	1
90 Other Diseases of the Heart ..	..	..	..	..	..	..	..	..
(a) Valvular—								
Mitral ..	2	5	1	7	..	17	2	19
Aortic ..	..	3	2	3	..	3	..	3
Tricuspid ..	..	..	..	..	..	..	..	..
Pulmonary ..	..	..	..	..	..	..	..	..
(b) Myocarditis ..	..	26	11	26	1	29	5	34
(c) Other Diseases ..	..	2	..	2	..	15	14	29
Carried forward ..	92	1,067	115	1,159	93	21,887	8,513	30,400

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Yearly Total		Total Cases Treated.	Remaining in Hospital at the end of 1933	Males.	Females.	Total.
		Admitted.	Deaths.					
Brought forward ..	92	1,067	115	1,159	93	21,887	8,513	30,400
IV. AFFECTION OF THE CIRCULATORY SYSTEM—(Continued).								
91 Diseases of the Arteries—								
(a) Aneurism ..	..	1	..	1	..	1	4	5
(b) Arterio-Sclerosis ..	..	..	..	..	..	..	..	..
92 Embolism or Thrombosis (non-cerebral) ..	..	..	..	..	..	..	..	..
93 Diseases of the Veins—								
Hæmorrhoids ..	..	46	..	46	3	159	45	204
Varicose Veins ..	..	3	..	3	1	16	3	19
Phlebitis ..	..	1	..	1	1	3	1	4
94 Diseases of the Lymphatic System—	..	..	..	..	..	..	..	..
Lymphangitis ..	1	7	..	8	..	167	25	192
Lymphadenitis, Bubo (non-specific) ..	2	85	1	87	2	404	42	446
95 Hæmorrhage of undetermined cause ..	..	1	..	1	..	6	3	9
96 Other affections of the Circulatory System ..	..	..	..	..	..	..	..	..
V. AFFECTIONS OF THE RESPIRATORY SYSTEM.								
97 Diseases of the Nasal Passages ..	..	13	1	13	..	1,193	289	1,482
98 Affections of the Larynx ..	..	..	..	..	..	..	..	..
Laryngitis ..	..	2	..	2	..	44	8	52
99 Bronchitis—								
(a) Acute ..	..	39	1	39	..	6,107	1,955	8,062
(b) Chronic ..	3	17	4	20	1	279	86	365
100 Broncho-Pneumonia ..	..	21	6	21	..	23	8	31
101 Pneumonia—								
(a) Lobar ..	5	48	15	53	1	67	13	80
(b) Unclassified ..	..	3	..	3	..	9	6	15
102 Pleurisy, Empyema ..	1	21	2	22	1	79	13	92
103 Congestion of the Lungs ..	..	4	1	4	..	2	2	4
104 Gangrene of the Lungs ..	..	..	..	..	..	..	..	..
105 Asthma ..	1	15	..	16	1	315	120	435
106 Pulmonary Emphysema ..	..	..	..	..	..	1	..	1
107 Other affections of the Lungs ..	..	6	1	6	..	251	704	955
VI. DISEASES OF THE DIGESTIVE SYSTEM.								
108 A.—Diseases of Teeth or Gums ..	..	16	1	16	1	4,826	1,793	6,619
B - Other affections of the Mouth ..	..	6	..	6	..	150	21	171
Carried forward ..	105	1,422	148	1,527	105	35,989	13,654	49,643

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Yearly Total		Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
		Admitted.	Deaths.					
Brought forward ..	105	1,422	148	1,527	105	35,989	13,654	49,643
VI. DISEASES OF THE DIGESTIVE SYSTEM—(Continued).								
109 Affections of the Pharynx or Tonsils ..	..	19	..	19	..	1,051	303	1,354
110 Affections of the Oesophagus ..	..	..	..	..	..	1	..	1
111 A.—Ulcer of the Stomach ..	..	1	..	1	..	7	1	8
B.—Ulcer of the Duodenum ..	..	9	..	9	3	15	1	16
112 Other affections of the Stomach—								
Gastritis ..	2	6	..	8	..	55	18	73
Dyspepsia, etc. ..	..	5	..	5	..	763	362	1,125
113 Diarrhœa and Enteritis—								
Under two years ..	..	..	..	..	..	94	40	134
114 Diarrhœa and Enteritis—								
Two years and over ..	..	52	1	52	..	341	76	417
114a Sprue ..	..	..	..	..	..	..	..	..
115 Ankylostomiasis ..	7	189	16	196	8	8,433	4,048	12,481
116 Diseases due to Intestinal Parasites—								
Cestoda (Tænia) ..	..	4	..	4	..	8	1	9
Nematoda (other than Ankylostoma)—	..	..	..	..	..	..	..	..
Ascaris ..	..	1	1	1	..	175	154	329
Other parasites ..	..	8	..	8	..	18	4	22
117 Appendicitis ..	..	20	3	20	1	24	6	30
118 Hernia ..	15	228	7	243	15	365	11	376
119 A.—Affections of the Anus, Fistula, etc. ..	3	17	2	20	2	29	6	35
119 B.—Other affections of the Intestines ..	..	35	1	35	..	11,908	5,937	17,845
120 Acute Yellow Atrophy of the Liver ..	..	..	..	..	..	..	..	..
121 Hydatid of the Liver ..	..	..	..	..	..	..	..	..
122 Cirrhosis of the Liver ..	..	..	..	..	..	..	..	..
123 Biliary Calculus ..	..	11	1	11	1	9	3	12
124 Other affections of the Liver—								
Abscess ..	..	..	..	..	..	..	..	..
Hepatitis ..	..	6	1	6	1	76	14	90
Cholecystitis ..	..	4	..	4	..	6	4	10
Jaundice ..	..	10	3	10	..	80	33	113
125 Diseases of the Pancreas ..	..	..	..	..	..	..	..	..
126 Peritonitis (of unknown cause) ..	..	9	6	9	..	8	1	9
127 Other affections of the Digestive System ..	..	1	1	1	..	34	8	42
Carried forward ..	132	2,057	191	2,189	136	59,489	24,685	84,174

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Yearly Total Admitted.	Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
Brought forward ..	132	2,057	191	2,189	136	59,489	24,685	84,174
VII. DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL).								
128 Acute Nephritis ..	..	11	5	11	..	68	7	75
129 Chronic Nephritis ..	..	16	3	16	4	27	2	29
130 A.—Chyluria ..	..	..	..	..	..	6	1	7
130 B.—Schistosomiasis ..	1	14	..	15	..	667	69	736
131 Other affections of the Kidneys ..	1	8	2	9	..	29	1	30
132 Urinary Calculus ..	..	2	2	2	..	4	..	4
133 Diseases of the Bladder ..	2	36	2	38	2	182	51	233
134 Diseases of the Urethra—								
(a) Stricture ..	1	19	..	20	1	119	15	134
(b) Other Diseases ..	..	21	1	21	1	30	2	32
135 Diseases of the Prostate ..	..	11	3	11	2	11	..	11
136 Diseases (non-Venereal) of the Genital Organs of Man ..	..	..	1	..	..	..	..	..
Epididymitis ..	4	20	2	24	..	67	..	67
Orchitis ..	..	55	2	55	1	408	..	408
Hydrocele ..	14	224	..	238	14	406	..	406
Ulcer of Penis ..	1	17	..	18	1	517	..	517
Phimosis ..	..	24	..	24	..	228	..	228
Para-phimosis ..	..	6	..	6	..	30	..	30
Other Diseases ..	..	79	2	79	..	85	..	85
137 Cysts or other non-malignant Tumours of the Ovaries ..	..	4	..	4	..	6	..	6
138 Salpingitis ..	..	11	1	11	1	..	51	51
139 Uterine Tumours (non-malignant) ..	..	12	2	12	1	..	43	43
140 Uterine Hæmorrhage (non-puerperal) ..	..	1	..	1	..	..	1	1
141 A.—Metritis ..	..	5	..	5	1	..	7	7
B.—Other affections of the Female Genital Organs ..	2	4	..	6	3	..	161	161
Displacement of Uterus ..	..	6	1	6	1	..	57	57
Amenorrhœa ..	..	..	..	..	..	..	43	43
Dysmenorrhœa ..	..	1	..	1	..	..	51	51
Leucorrhœa ..	..	..	..	..	..	..	4	4
Other affections ..	..	7	..	7	..	..	74	74
142 Diseases of the Breast (non-puerperal)—	..	..	..	..	..	..	36	36
Mastitis ..	2	3	..	5	..	..	34	34
Abscess ..	..	4	..	4	..	..	8	8
VIII. PUERPERAL STATE.								
143 A.—Normal Labour ..	..	40	..	40	..	..	46	46
Delayed Labour ..	..	2	1	2	..	..	6	6
B.—Accidents of Pregnancy—								
(a) Abortion ..	..	4	..	4	..	..	7	7
(b) Ectopic Gestation ..	..	..	..	..	..	..	..	..
(c) Other accidents of Pregnancy ..	..	8	..	8	..	..	16	16
Carried forward ..	160	2,732	221	2,892	169	62,373	25,484	87,857

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Y'ly. Admitted.	Total Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
Brought forward ..	160	2,732	221	2,892	169	62,373	25,484	87,857
VIII. PUERPERAL STATE--(Cont).								
144 Puerperal Hæmorrhage ..	1	..	..	1	..	..	1	1
145 Other accidents of Parturition ..	..	5	2	5	..	..	10	10
146 Puerperal Septicæmia ..	..	4	..	4	..	..	4	4
147 Phlegmasia Dolens ..	..	..	..	..	..	..	1	1
148 Puerperal Eclampsia ..	..	..	..	..	..	..	1	1
149 Sequelæ of Labour ..	..	..	..	..	..	..	1	1
150 Puerperal affections of the Breast ..	..	..	..	..	..	..	..	..
IX. AFFECTIONS OF THE SKIN AND CELLULAR TISSUES.								
151 Gangrene ..	1	23	5	24	..	38	6	44
152 Boil ..	..	3	..	3	..	960	207	1,167
Carbuncle ..	..	4	1	4	1	92	13	105
153 Abscess ..	7	136	4	143	4	1,283	415	1,698
Whitlow ..	..	12	..	12	..	209	31	240
Cellulitis ..	3	64	5	67	4	814	292	1,106
154 A.—Tinea ..	..	1	..	1	..	778	235	1,013
B.—Scabies ..	1	4	..	5	..	6,668	3,239	9,907
C.—Tropical Ulcer ..	2	136	..	133	11	452	65	517
D.—Other Ulcers ..	11	544	1	555	71	24,882	5,658	30,540
155 Other Diseases of the Skin —								
Erythema ..	..	..	..	..	..	373	115	488
Urticaria ..	..	1	..	1	..	23	5	28
Eczema ..	..	6	..	6	..	498	214	712
Herpes ..	..	3	..	3	..	79	11	90
Psoriasis ..	..	..	..	..	..	8	2	10
Elephantiasis ..	5	32	..	37	2	129	29	158
Myiasis ..	..	2	..	2	..	4	1	5
Chiggers ..	..	6	..	6	..	819	238	1,057
Other Diseases ..	2	32	..	34	3	1,394	285	1,679
X. DISEASES OF BONES AND ORGANS OF LOCOMOTION (OTHER THAN TUBERCULOUS).								
156 Diseases of Bones ..	2	15	..	17	5	47	11	58
157 Diseases of Joints—								
Arthritis ..	2	13	1	15	..	810	204	1,014
Synovitis ..	1	19	1	20	..	95	14	109
158 Other Diseases of Bones or Organs of Locomotion ..	1	33	..	34	3	1,568	914	2,482
XI. MALFORMATIONS.								
159 Malformations ..	..	5	..	5	..	3	3	6
XII. DISEASES OF INFANCY								
160 Congenital Debility ..	..	2	1	2	..	..	2	2
161 Premature Birth ..	..	..	..	..	..	..	..	..
162 Other affections of Infancy ..	..	2	..	2	..	6	5	11
163 Infant Neglect (infants of three months or over) ..	..	..	..	..	..	..	..	..
Carried forward ..	199	3,839	242	4,038	273	104,405	37,716	1,42,121

TABLES V. AND VI.—(Continued.)

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1932.	Admitted.	Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1933.	Males.	Females.	Total.
Brought forward ..	199	3,839	242	4 038	273	104405	37,716	142,121
XIII. AFFECTIONS OF OLD AGE.								
164 Senility ..	60	32	2	98	56	20	13	33
Senile Dementia ..	..	142	103	142	..	123	104	227
XIV. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.								
175 Food Poisoning ..	..	..	..	..	..	2	..	2
176 Attacks of Poisonous Animals								
Snake Bite ..	..	..	..	..	..	13	1	14
Insect Bite ..	..	..	..	..	..	44	3	47
177 Other accidental Poisonings ..	..	2	1	2	..	4	..	4
178 Burns (by Fire) ..	3	27	5	30	2	289	155	444
179 Burns (other than by Fire) ..	..	8	..	8	..	21	26	47
182 Drowning (accidental) ..	..	..	..	..	..	..	..	..
183 Wounds (by Firearms, war excepted) ..	..	1	..	1	..	1	..	1
184 Wounds (by cutting or stabbing Instruments) ..	5	75	..	80	..	2,085	394	2,479
185 Wounds (by Fall) ..	2	94	1	96	3	3,503	437	3,940
186 Wounds (in Quarries or Mines) ..	..	1	..	1	..	109	..	109
187 Wounds (by Machinery) ..	..	16	..	16	..	28	..	28
188 Wounds (crushing, e.g., railway accidents, etc.) ..	..	8	..	8	1	9	..	9
189 Injuries inflicted by Animals, (bites, kicks, etc.) ..	..	5	..	5	..	63	12	75
192 A.—Over fatigue ..	..	..	..	..	..	..	..	..
B.—Hunger or Thirst ..	..	1	..	1	..	1	..	1
194 Exposure to Heat—								
Heatstroke ..	..	1	..	1	..	2	..	2
201 A.—Dislocation ..	1	2	..	3	..	41	5	46
B.—Sprain ..	..	8	..	8	..	293	12	305
C.—Fracture ..	11	59	3	70	6	76	11	87
202 Other external Injuries ..	2	18	1	20	1	2,933	328	3,271
202(a) Judicial Hanging ..	..	..	..	..	..	..	..	..
203 Deaths by Violence of unknown cause ..	..	..	..	..	..	..	..	..
XV. ILL-DEFINED DISEASES.								
204 Sudden Death (cause unknown) ..	..	..	..	..	..	1	1	2
205 A.—Diseases not already specified or ill-defined ..	..	..	..	..	..	..	..	..
Ascites ..	..	8	..	8	..	15	5	20
Edema ..	..	1	..	..	..	50	13	63
Asthenia ..	14	106	26	120	17	990	422	1,412
Shock ..	..	5	1	5	..	5	..	5
Dentition ..	..	..	..	..	..	1	6	7
Hyperpyrexia ..	..	..	..	..	..	..	..	..
Pyrexia of uncertain origin ..	..	16	..	16	..	1,420	328	1,748
N. Y. D. and Unclassified ..	..	35	2	35	..	457	140	597
B.—Malingering ..	1	1	..	1	1	18	3	21
Total ..	298	4,493	387	4,815	360	117022	40,145	157,167

APPENDIX I.

REGISTRATION OF MEDICAL PRACTITIONERS, DENTISTS
AND DRUGGISTS.

The Registration Board consists of the Director of Medical and Sanitary Services, the Deputy Director of Sanitary Services and one registered private medical practitioner. Dr. R. S. Taylor resumed his place on the Board when he returned to the Protectorate on 22nd April, 1933.

One meeting of the Board was held during the year and one medical practitioner was registered.

At the beginning of the year there were on the Register. 30 medical practitioners, 4 dentists and 17 druggists; at the end of the year 31 medical practitioners, 6 dentists and 21 druggists. Actually resident in the Protectorate at the end of the year there were 18 medical practitioners, 1 dentist and 21 druggists of whom 9 medical practitioners and 6 druggists were in Government Service.

APPENDIX II.

FUNZI ISLAND LEPER SETTLEMENT.

JOINT REPORT BY MISS MIDDLETON, SUPERINTENDENT, AND DR. D. D. MCCARTHY VISITING MEDICAL OFFICER.

During the past year there has been very little fluctuation in the numbers of the out-going and in-coming lepers to the Asylum, as is shown by the following statistics:—

	M.	F.	Total	M.	F.	Total
Number of lepers in Asylum 1st January, 1933	67	25	92			
Number of new cases admitted during 1933	13	1	14			
Number of lepers re-admitted during 1933	1	—	1			
Number of deaths in Asylum	7	4	11			
				81	26	107
Number paroled from Asylum as below :—						
To Walezo	1	—	1			
To Homes	1	—	1			
Absconded	1	—	1			
Number remaining in Asylum beginning of 1934	71	22	93			

The atmosphere of the settlement has been generally happy, and most of this can be attributed to the fact that more time has been given by the individual lepers to enlarging shambas, resulting in a very good crops of mohogo, and muhindi. Also a great cause of contentment is undoubtedly due to the continuance of granting permission to visit their respective homes for a period of seven days from time to time.

All the buildings in the Settlement and the Sister's Quarters, have been thoroughly examined, repaired, and white-washed by the Public Works Department.

During the year His Excellency the British Resident and Lady Rankine honoured Funzi with a visit, and their kindly and never-failing interest was very much appreciated by one and all. The same

evening they gave a display of fireworks when H.H.S. "Cupid" was anchored off the Island, causing great excitement to the Lepers.

Many kind gifts have been received during the year from the following:—

H. E. the British Resident and Lady Rankine, Dr. B. Spearman, Mr. and Mrs. Stedman, the Captain H.H.S. "Khalifa", Parsee Hormusji Sorabji, the Revd. Father Weigall.

APPENDIX III.

CONTROL OF OPIUM.

The following are the particulars regarding opium addicts:—

	M. F.		M. F.		M. F.	
	1931.		1932.		1933.	
Number of opium addicts remaining from the previous year	57	24	57	23	55	22
Number of applications for permits during the year	2	—	—	—	5	—
Number of permits granted during the year	2	—	—	—	5	—
Number of permits refused during the year	—	—	—	—	—	—
Number of permits cancelled—						
(a) Owing to death	2	—	2	1	—	3
(b) Owing to other causes	—	—	—	—	9	—
Number of opium addicts remaining at the end of the year	57	24	55	22	51	19
	ozs.		ozs.		ozs.	
Amount of opium issued to addicts during the year	455		442		448	
	Rs.		Rs.		Rs.	
Amount received in payment for opium issued	2,843 12		2,741 50		2,801 87	

APPENDIX IV.

FIFTEENTH ANNUAL REPORT OF THE ZANZIBAR MATERNITY ASSOCIATION FOR THE YEAR ENDING 31ST DECEMBER, 1933.

The financial depression during 1933 has not failed to make itself felt on the Association for, during the year, the record of cases in the Town area shows, for the first time for some years, a decline. In 1932, 489 births were recorded while for 1933 the number is 444, a decrease of 45. It is chiefly among the Hindus and Goans where the decline is noticed.

As a set off against the decline in the Town area, the inauguration of Rural Maternity Homes, in the Southern part of Zanzibar Island, have recorded 155 births. Thus the total births under the auspices of the Association amount to 599 for the year, a considerable increase over 1932.

Under the existing conditions it was not possible to extend the Association's activities beyond the Township of Zanzibar. The Administration of the Zanzibar Government, therefore, took upon themselves the responsibility of providing suitable candidates from the rural areas for training at the Central Home in Zanzibar Town.

It was not without considerable difficulty that suitable girls were obtained; native prejudice was opposed to the introduction of any method other than the one to which it had been accustomed for

generations and also the *Wazee* of the villages were reluctant to assist in providing candidates. By patience and many discussions some girls were at last induced to come in for training.

The Matron, Miss Locket, has from this material produced five trained midwives, they were sent back to their respective villages between July and October last.

Native Homes were adapted by cementing floors, and letting in windows, and generally equipped with beds, cots, medicines, etc.

The popularity of these Rural Homes is most marked and it can be claimed that after the five months these have been in operation, there is hardly a maternity case in any of these villages that is not treated in the Home. Under Schedule D will be found the details.

2. The welfare attendances at the Home for ante-natal, post-natal and gynæcological advice and treatment are even more satisfactory than in 1932 which was then a record. An increase of over 2,000 attendances must be looked on as highly satisfactory. Statistics will be found in Schedule C.

3. The out-patient attendances also show an increase over 1932. Reference to Schedule C should be made for details.

4. A Statement of receipts and payments for the year will be found in Appendix E. There is a fall of some Rs. 1,000 in the former, partly due to arrears of subscriptions outstanding at the end of the year while expenditure has increased. The new Rural Homes have been responsible to some extent for the increase.

5. The Association received sums from two anonymous donors and the Wakf Commissioners, these amounts were given for rural work.

6. Steady progress and extension is being made by the Association and it again wishes to place on record its deep appreciation to the Matron, Miss B. J. Locket, M.B.E., for her untiring and devoted service, and it is not unmindful of the valuable work carried out by the members of the staff.

7. The Association desires to take the opportunity of tendering its sincere thanks to those who have contributed to its funds during the past year.

8. In conclusion the Association is most grateful to Mr. H. Allen for auditing its accounts and to Mr. A. A. Albuquerque for valuable services rendered by him as Hony. Treasurer and the sincere interest he has always displayed in the Maternity Homes' welfare.

B. C. JOHNSTONE,
Honorary Secretary.

Zanzibar, 6th April, 1934.

SCHEDULE "A".

Statement showing the number of cases attended by midwives of the Association during 1933 as compared with the number of live births registered in the Zanzibar Town area.

Nationality.	Live	Still	Miscarriages.	Live Births	
	Births.	Births.		Total.	Registered.
African Natives—Town	81	12	14	107	111
„ „ Districts	142	7	0	149	0
Arabs	45	4	0	49	61
Shihiris	10	1	0	11	21
Comorians	14	1	2	17	19
Bohoras	46	3	7	56	50
Ismaili Khojas	6	0	0	6	108
Ithnasheri Khojas	85	9	14	108	85
Bhatias	9	1	0	10	12
Hindus other than Bhatias	50	1	1	52	102
Memons	11	0	0	11	34
Other Asiatic Mohammedans	12	0	1	13	12
Goans	10	0	0	10	31
Other Communities	0	0	0	0	6
Total	*521	39	39	599	652

*Including 7 cases of twins.

SCHEDULE "B".

Comparative statistics of cases attended by midwives of the Association during the period 1920-1933.

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
African														
Natives	—	11	11	12	18	18	38	44	83	77	99	101	106	256
Arabs	—	20	13	21	31	27	18	17	13	30	35	49	47	49
Comorians	2	6	6	4	6	7	12	8	12	20	15	20	21	17
Shihiris	—	—	1	4	2	3	2	1	2	5	7	10	4	11
Total	2	37	31	41	57	55	70	70	110	132	156	180	178	333
Other Communities	59	55	147	96	184	197	196	180	210	246	258	283	311	266
Grand Total	61	92	178*	137†	241	252	266	250	320	378	414	463	489	599

* Note :—Including miscarriages, the 1923 and 1924 figures were 151 and 256 respectively.

† 7 cases of twins.

SCHEDULE "C".

Mwembeladu Maternity Home.

(a)

Particulars of cases admitted to the Home during 1933.

Community.	Births.	Miscarriages.	Total.
African Natives	88	8	96
Arabs	18	—	18
Shihiris	5	—	5
Comorians	4	—	4
Ismaili Khoja	1	—	1
	—	—	—
Total	116	8	124
	—	—	—

(b)

Welfare attendances at the Home.

(1930-1933)

	1930.	1931.	1932.	1933.
Ante-natal	1,371	2,763	2,987	3,578
Post natal	978	1,372	1,677	2,749
Gynaecological	2,975	7,571	8,216	8 626
	—	—	—	—
Total	5,324	11,706	12,880	14,963
	—	—	—	—

(c)

Out-patient attendances at the Home Dispensary.

(1930-1933)

	1930.	1931.	1932.	1933.
New Cases	9,688	13,180	12,718	11,711
Re-attendances	22,489	22,666	24,103	25,451
	—	—	—	—
Total	32,177	35,846	36,821	37,162
	—	—	—	—

SCHEDULE "D".

Statement showing the numbers of births attended to by the Association midwives in the Districts during 1933.

(a) Makunduchi (July-December).

	No. of Births.
At the Maternity Hut :	
African Natives	73
In the District :	
African Natives	34
Arabs	1
Indians	4
Total	112

(b) Kizimkazi (October-December).

At the Maternity Hut :	
African Natives	7
In the District :	
African Natives	1
Total	8

(c) Jambiani (September-December).

At the Maternity Hut :	
African Natives	Total 19

(d) Dimbani (September-December).

At the Maternity Hut :	
African Natives	Total 7

(e) Muyuni (November-December).

At the Maternity Hut :	
African Natives	8
Arabs	1
Total	9
Grand total	155

SCHEDULE "E".

Statement of Receipts and Payments for the year ended 31st December, 1933.

RECEIPTS.		PAYMENTS.	
	Rs. Cts.		Rs. Cts.
Balance at 31st December, 1932	... 10,253 32	Salaries and Allowances of Midwives	... 15,889 05
Subscriptions	... 3,750 00	House Allowances	... 849 68
Fees, Zanzibar Town	... 3,871 00	Uniforms	... 30 00
Fees, Districts	... 14 00	Passages	... 853 87
Donations	... 1,300 00	Allowances: Town Native apprentices	... 720 00
Miscellaneous Receipts	... 175 00	" District "	... 951 00
Government Grant	... 8,100 00	Wages of Menials: Mwembeladu Maternity Hospital	... 420 00
		Light and Power	... 174 00
		Incidental Expenses	... 216 30
		Preparation of Maternity Homes at Makunduchi, Kizimkazi, Jambiani, Dimbani and Muyuni	... 357 03
		Equipment for District Maternity Homes	... 1,222 59
		Allowances for Staff at District Maternity Homes	... 212 50
		Balance at 31/12/33:—	
		On fixed Deposit with N. B. of India	... 4,000 00
		Current account with N. B. of India	... 1,567 30
		Total	27,463 32

Audited and found correct.

H. ALLEN,
Hony. Auditor.

7th February, 1934.

A. A. ALBUQUERQUE,
Hony. Treasurer.

ANNUAL VETERINARY REPORT.

For the Year 1933.

SECTION I.—ADMINISTRATION.

A. STAFF.

The Veterinary Staff for the year consisted of:—

Veterinary Officers	2
Veterinary Assistant	1
Veterinary Cadets	2
Attendants	12

Veterinary Officer Ramazan Dar proceeded to India on five months privilege leave on 6th December.

B. FINANCIAL.

The Revenue from Veterinary Services totalled Rs. 17,849-55 and is derived from the following sources:—

	Rs.	Cts.
Cattle importation and exportation fees	4,716	75
Veterinary hospital fees	36	38
Abattoir fees	5,932	50
Landing of cattle fees	1,420	35
Wharfage charges for the landing of Animals	609	57
Rent for Mji Mpia Dairy Sheds	4,544	00
Rent for Dairy Shed Sites at Mji Mpia	162	00
Rent for Government Lairage at Gulioni	30	00
Cremation fees	224	00
Fee charged for overstaying of animals in Quarantine after the expiry of Quarantine period	174	00
	17,849	55

Expenditure on new buildings, repairs, etc., during the year:—

	Rs.	Cts.
Mji Mpia Cowsheds	144	11
Gulioni Abattoir	65	54
Total Rs.	209	65

C. LEGISLATION.

Government Notice No. 22 of 1st April, 1933 under The Diseases of Animals Decree, 1923. The British Resident declared the area comprising the Town of Zanzibar and the Mashehas area of Mwera, Fuoni and Mombasa, Mtondoni to be an infected area as regards the disease of rinderpest and prohibited the movements of cattle into or out of such area.

Government Notice No. 38 of 29th April revoked the above mentioned notice.

Government Notice No. 57 of 1st July: The Diseases of Animals Decree, 1923. Importation of Animals from Kenya and Tanganyika Territory, provides that "No animals which have been shipped from any port in Kenya and Tanganyika Territory shall be landed in the

Protectorate unless they are accompanied by a certificate signed by a Government Veterinary Officer declaring that at the date of loading such animals were free from disease and that the port of loading was on such date free from disease''. and revoked Government Notice No. 122 of 1923 and Government Notice No. 4 of 1927.

Government Notice No. 79. The Public Health Decree: The Public Health (Slaughter House) Rules, 1932.

Rules were made and came into operation on the 1st day of January, 1933.

SECTION II.—DISEASES OF ANIMALS.

A. DISEASES OF RUMINANTS.

Pleuro-pneumonia Contagiosa bovis.—There was an outbreak of this disease among the dairy cattle kept at Mji Mpia. It appeared there during the first week of February. All the sick and suspected cases which totalled five were isolated and destroyed. I consider it to be a recrudescence of last years' outbreak. The slow and insidious nature of the disease makes it difficult to obtain a conclusive diagnosis especially in the early stages. In many cases its existence is only found on post-mortem.

During the course of the past two or three years several positive cases of this disease have been seen among dairy cattle: they were isolated and destroyed. But this does not mean that thereby the infection has been totally extirpated.

There undoubtedly may be a case or cases which have escaped detection and are liable to cause infection in healthy animals.

Rinderpest.—An outbreak of this disease occurred at Mji Mpia in February. Infection was probably introduced through a latent case in quarantine. Innoculation of serum was immediately undertaken—593 animals being treated at Mji Mpia.

A few cases of the disease were found in cattle grazing in the neighbourhood of the town.

The movement of cattle was therefore prohibited by Government Notice No. 22 of 1933 for a period of a month. In this area 130 animals were inoculated.

The number of deaths during the epidemic was 93 including cows, calves and heifers.

The second outbreak of this disease occurred in Cattle Quarantine Pigaduri on 10th September among a herd of 59 animals which had arrived from Lamu and Kismayu by the S.S. "Ayamonte" on 6th September. Forty-four oxen were from the former and 15 from the latter port.

None of these animals were allowed to go out grazing and were fed and watered in their Kraals and all were slaughtered in quarantine within six days.

Fortunately the disease was suppressed in quarantine and did not spread into the Island.

Hæmorrhagic Septicæmia of Cattle.—This disease appeared for the first time at Mji Mpia in milch cows and calves and caused the deaths of four cows and two calves. Diagnosis was confirmed by microscopical examination of blood which showed the presence of a "bipolar bacterium" in large numbers. It was an œdematous form of the disease and showed a considerable swelling of the hard intermaxillary space, neck and dewlap. In some cases the tongue was seen protruding out of the oral cavity, much swollen and brown red in colour. The course of the disease was rapid death occurring from asphyxia within 18 to 48 hours. The pectoral and intestinal forms of the disease were not seen in any of the animals infected.

Trypanosomiasis.—(a) Imported Cattle.—During the year under review 122 oxen, 195 cows, 2 calves, 10 goats, 11 camels, 20 buffaloes and 2 bulls were examined for trypanosomiasis while in the Quarantine Station. Out of these, 3 oxen and one buffalo were found infected and slaughtered in quarantine.

(b) Local Cattle.—Out of 37 cows, 8 calves and heifers, 1 goat, 3 buffaloes and 6 bulls examined none were found infected.

East Coast Fever.—(a) Imported Cattle.—There was no outbreak of this disease in quarantine during the year under review.

(b) Local Cattle.—Of 21 cows and 8 calves examined for this disease, one cow was found infected.

Piroplasmosis other than East Coast Fever.—(a) Imported Cattle.—No animals examined.

(b) Local Cattle.—Out of 21 cows and 8 calves examined none was found infected.

Cutaneous Streptothricosis.—The cysticercus stage of this cestode has been found on a few occasions in the liver and lungs of slaughtered cattle. On one occasion a huge cyst was found in the spleen.

Strongylosis.—*Hæmonchus contortus* is a common parasite and is usually found in the abomasum and intestines of local cattle and goats.

Distomiasis.—Due to *Fasciola gigantice* though very common in cattle imported from Tanganyika Territory, has also been seen in animals from Lamu.

Pleuro-pneumonia Contagiosa of Goats.—There was no serious outbreak of this disease either in quarantine or in local goats.

Oestrus Ovis or Sheep Nostril Fly.—Is commonly seen in its larval form in the nasal passages and sinuses of the head on meat inspection.

Sarcoptic Mange of Goats and Sheep.—Few cases were seen among imported goats and sheep. No case has been seen among local goats.

Cysticercus Tenuicollis.—Very common in local goats, the bladder is generally found attached to the liver.

Tetanus.—One case in a cow with fatal results.

B. DISEASES OF EQUINES.

Horse Sickness.—There was no case of this disease.

Glanders.—No case of this disease has been reported or seen in the Protectorate.

Trypanosomiasis.—Seven horses and six donkeys were examined with negative results.

Epizootic Lymphangitis.—No case reported or seen.

Tetanus.—One case which recovered occurred in a horse at the Government Stables.

C. DISEASES OF CANINES.

Rabies.—No case reported or seen.

Piroplasmosis.—No case came under observation.

Distemper.—No case reported or seen.

Destruction of Stray Dogs.—Twenty-seven dogs were destroyed.

D. DISEASES OF BIRDS.

Fowl Cholera.—There was an outbreak of this disease at Welezo among poultry belonging to the Catholic Mission and with heavy mortality.

Chicken-pox.—A few cases occurred at Kizimbani.

SECTION III.—GOVERNMENT DAIRY SHEDS MJI MPIA.

The number of animals kept at Mji Mpia at the end of the year was as follows:—

Cows	430
Calves and heifers	158
Bulls	11
Total	599

Of these 184 cows, 106 calves and heifers and 8 bulls were housed in Government Sheds for which the dairymen paid a monthly rent. The remainder were housed in sheds approved by the Sanitary Authorities and built privately on Government land situated in the vicinity of the Mji Mpia Cattle dipping tank. The owners pay a small ground rental.

There were outbreaks of Rinderpest, Pleuro-pneumonia and H. Septicæmia here, accounts of which appear under the heading of the Disease of Animals.

All animals kept at Mji Mpia whether in Government or in privately constructed sheds are regularly and systematically dipped at a weeks' interval, the total number of dipping performed being 18,847 cows, 8,454 calves and heifers and 484 bulls.

The dipping fluid is examined monthly by the Government Chemist and kept at standard strength.

SECTION IV.—MEAT INSPECTION.

The animals are slaughtered in the Government Slaughter House under supervision. They are brought to the Abattoir in the afternoon of the previous day when an ante-mortem inspection is made and unfit animals are rejected.

Slaughtering begins at 4 a.m. and the dressed carcasses are examined before removal to the market. Meat slightly infected with *C. bovis* is thoroughly boiled on the premises and handed over to the owner and sold at a cheap rate. If heavily infected the carcase is cremated.

During the year 15,619 animals were slaughtred. Out of these 4,867 were partially and 102 wholly condemned.

Occasionally sanction is given by the Sanitary Authorities to slaughter an animal (usually a goat) on private premises for religious purposes. Such animals are also examined before slaughter.

SECTION V.—PIGADURI QUARANTINE STATION.

All live stock imported into the Protectorate undergo a period of quarantine, for cattle a fortnight, and for goats and sheep, five days.

Horses and mules imported and not accompanied by a satisfactory certificate of health are subjected to the "Mallein Test".

Blood films are taken from all imported milch cows, camels and buffaloes and many other animals such as oxen, donkeys, etc. for trypanosomiasis. Any found infected are forthwith slaughtered, or, if the owner so wishes, returned to their port of origin.

The importation of canines and felines is forbidden unless accompanied by a certificate from a Veterinary Surgeon to the effect that the animal is free from rabies.

The dipping tank was continually in use throughout the year and cattle were dipped at a three-day interval. Dippings numbered 7,040.

TABLE I.

Comparative table of deaths among stock in Zanzibar Town and Quarantine Station during the three years, 1931-1933:—

	1931.	1932.	1933.
Milch Cows	39	31	83
Calves and Heifers	32	34	49
Bullocks and Oxen	12	6	14
Goats	11	11	32
Sheep	2	5	1
Horses	1	4	1
Donkeys	16	16	18
Mules	6	1	—
Buffaloes	—	—	2
Dogs	—	1	—
	119	109	200

Compared with the previous two years there was a considerable increase in the number of deaths amongst stock owing to outbreaks of rinderpest, pleuro-pneumonia contagiosa bovis and Hæmorrhagic Septicæmia.

TABLE II.

Comparative table of animals imported during the three years, 1931-1933.

	1931.	1932.	1933.
Oxen	3,304	3,150	2,150
Cows	87	156	209
Calves	70	127	142
Goats	10,414	9,850	6,906
Sheep	3,424	3,191	2,236
Horses	6	4	1
Donkeys	25	15	10
Camels	2	1	11
Buffaloes	—	—	4
Bullocks and Calves	—	—	3
Dogs	7	1	—
Cats	—	2	—
Rabbits	3	—	—
	17,342	16,497	11,672

Compared with the years 1931 and 1932 there was a considerable decrease in the number of oxen, goats and sheep imported. There was a decrease of 1,154 oxen, 3,509 goats and 1,188 sheep as compared to the year 1931 and of 1,000 oxen, 2,944 goats and 955 sheep, as compared to the year 1932. This decrease may be due to the general financial depression or the imposition of customs duties. However there was a noticeable increase in the number of cows and calves imported. There was an increase of 122 cows and 72 calves, as compared with the year 1931, and 53 cows and 15 calves as compared with the year 1932, this increase is due perhaps because milch cows and calves are exempted from duty.

TABLE III.

Comparative table of animals exported during the three years, 1931-1933.

	1931.	1932.	1933.
Oxen	348	165	14
Cows	—	—	—
Calves	—	—	—
Goats	470	218	41
Sheep	2	28	—
Donkeys	19	1	8
Cats	—	—	2
Dogs	3	—	—
	842	414	65

The table shows a decrease of 334 oxen, 429 goats, 11 donkeys, as compared to the year 1931 and of 151 oxen, 177 goats as compared with the year 1932. It shows an increase of 7 donkeys as compared to last year but a decrease of 11 donkeys as compared to the year 1931.

TABLE IV.

Table showing the number of animals treated as In and Out-Patients during the year 1933 including new cases and repetitions:—

Horses	221
Mules	4
Donkeys	158
Cows	153
Calves	12
Bullocks	79
Dogs	69
Cats	59
Heifers	24
Fowls	37
Goats	7
Sheep	6
Parrots	19
Buffalo	1
	849

TABLE V.

Table showing the number of animals examined and slaughtered in the Government Abattoir during the year 1933, compared with the previous two years:—

Species.	Slaughtered in Government Abattoir.			Wholly Condemned.			Partially Condemned.			Slaughtered at Pigaduri.			Rejected.		
	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933
Oxen	3,062	3,158	2,419	70	64	31	2,162	1,789	1,483	66	68	121	...	191	113
Cows	162	141	259	...	..	2	21	1	5	...	10	2	...	...	2
Calves	31	60	32	...	...	...	...	3	...	...	7	...	...	...	...
Goats	11,179	10,500	10,745	60	46	59	3,257	2,414	2,591	...	3	2	...	643	271
Sheep	3,510	2,946	2,153	25	18	10	1,283	777	788	...	...	...	...	310	155
Camels	...	5	11	...	...	...	...	...	...	...	...	...	...	...	...
Total	17,934	16,810	15,619	155	128	102	6,723	4,984	4,867	66	88	125	...	1,144	541

Thirty-one oxen were condemned for measles.

Two cows were condemned for Pleuro-pneumonia Contagiosa Bovis.

Fifty-nine goats and two sheep were condemned for Pleuro-pneumonia, emaciation, etc."

TABLE VI.

Table showing the number of examinations carried out in the Veterinary Laboratory during 1933:—

			Local Stock.			Imported Stock			Total Local and Imported Stock.		
			No. examined	Positive	Negative	No. examined	Positive	Negative	No. examined	Positive	Negative
TRYPANOSOMIASIS											
Goats	..	..	1	..	1	10	..	10	11	..	11
Oxen	..	..	..	..	..	122	3	119	122	3	119
Cows	..	..	37	..	37	195	..	195	232	..	232
Calves and heifers	..	..	8	..	8	2	..	2	10	..	10
Donkeys	..	..	6	..	6	..	..	..	6	..	6
Horses	..	..	7	..	7	..	..	..	7	..	7
Dogs	..	..	1	..	1	..	..	..	1	..	1
Camels	..	..	..	..	..	11	..	11	11	..	11
Buffaloes	..	..	3	..	3	20	1	19	23	1	22
Bulls	..	..	6	..	6	2	..	2	8	..	8
Total	..	..	69	..	69	262	4	358	431	4	427
EAST COAST FEVER											
Cows	..	..	21	1	20	40	..	40	61	1	60
Calves	..	..	8	..	8	..	..	..	8	..	8
Oxen	..	..	..	..	..	26	..	26	26	..	26
Total	..	..	29	1	28	66	..	66	95	1	94
PIROPLASMOSIS											
Cows	..	..	21	..	21	..	..	..	21	..	21
Calves	..	..	8	..	8	..	..	..	8	..	8
Total	..	..	29	..	29	..	..	..	29	..	29
HAEMORRHAGIC SEPTICAEMIA											
Cows	..	..	2	2	..	..	..	..	2	2	..
Calf	..	..	1	1	..	..	..	..	1	1	..
Total	..	..	3	3	..	..	..	..	3	3	..
TUBERCULOSIS (AVIAN)											
Chicken	..	..	1	1	..	..	..	..	1	1	..
Total	..	..	1	1	..	..	..	..	1	1	..
CHOLERA (FOWL)											
Chickens	..	..	10	2	8	..	..	..	10	2	8
Total	..	..	10	2	8	..	..	..	10	2	8

TABLE VII.

Table showing the number of Post-Mortems performed during the year 1933:—

	Rinderpest	East Coast Fever	Tetanus	Septicæmia	Pleuro-pneu- monia	Typhinitis	Colic	Malnutrition	H. Septi- cæmia	Vertigo	Choking	Fowl Cholera	Suffocation	Tuberculosis	Pericarditis	Injuries	Ruptured Spleen	Senility	Not diagnosed
Oxen	2	..	..	..	..	..	..	..	..	..	..	..	3	..	..	1	1	..	..
Cows	2	1	1	3	5	2	..	..	4	1	..	..	1	..	..	2	..	1	2
Calves	2	..	..	..	..	..	..	5	..	2	..	1	..	..	..	..	..	..	1
Heifers	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buffaloes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Donkeys	..	..	..	1	..	..	2	..	..	..	..	..	..	..	1	..	..	3	..
Goats	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Chicken	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..
	6	1	1	6	7	2	2	5	4	3	..	3	4	1	1	3	2	4	5

SHAH MOHAMMED KHAN,
Veterinary Officer

